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Report 10805
1 April 1996

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AEROJET

**Meteorological Satellites (METSAT) and
Earth Observing System (EOS)
Advanced Microwave Sounding Unit-A (AMSU-A)
Stress Analysis Report**

**Contract No: NAS 5-32314
CDRL: 113**

Submitted to:

**National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771**

Submitted by:

**Aerojet
1100 West Hollyvale Street
Azusa, California 91702**

Aerojet

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SECTION 1

INTRODUCTION

This *Stress Analysis Report* for the Meteorological Satellites Project (METSAT) Advanced Microwave Sounding Units - A (AMSU-A), A1 Module, reports the structural margins of safety and natural frequency predictions for the METSAT design at Critical Design Review (CDR). The report has been prepared in accordance with GSFC S-480-79, Performance Assurance Requirements (PAR) for the Earth Observing System (EOS) & Meteorological Satellites Project (METSAT) Advanced Microwave Sounding Units - A.

1.1 IDENTIFICATION

This is the Stress Analysis Report for the Meteorological Satellites Project (METSAT) Advanced Microwave Sounding Units - A (AMSU-A), Module A1. This report is submitted to fulfill the requirements of Contract NAS 5-32314 CDRL 113, Stress Analysis Report, for the METSAT AMSU-A1 Module. The Stress Analysis Report for the A2 module has been submitted under separate cover.

1.2 PURPOSE AND OBJECTIVES

The purpose of this analysis is to show that the METSAT AMSU-A1 Module exhibits positive structural margins of safety when subjected to the METSAT environmental specifications given in Appendix E of the GSFC-S-79 PAR document.

In addition, the dynamic analysis results are used to show that the METSAT AMSU-A1 Module natural frequencies are above 100 Hz and that the simplified test and analytical model requirements of GSFC-S-79 PAR for METSAT General Instruments, can be applied to the METSAT AMSU-A1 module.

1.3 DOCUMENT STATUS AND SCHEDULE

This is the submittal of the *Stress Analysis Report* for the METSAT AMSU-A1 Module at CDR, April 1996.

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SECTION 2

SUMMARY OF RESULTS AND CONCLUSIONS

A stress analysis of the primary structure of the METSAT AMSU-A1 Module has been performed using the static loads given in Appendix E, Section 1.2, of GSFC 422-S-79 PAR. Combined with factors of safety (1.4 ultimate, 1.25 yield), the static loads minimum margins of safety summary is given in Table 1.

The METSAT AMSU-A1 Module exhibits positive margins of safety (MS) in all parts of the structure for static design loads. Minimum MS is +0.26 and is in the sidemount at the +X upper mounting bolt region for case 4 loads of $G_y = -20.6$ $G_z = 19.6$ (in Aerojet METSAT coordinate system). Figure 1 shows the stress contour plot of the sidemount critical region, with maximum von Mises stress of 22234 psi. Figures 2 through 9 show the full model contour plots, for load cases 1 through 4, shell surfaces 1 and 2. Figures 10 through 17 show full model beam stress maximums and minimums, for load cases 1 through 4. The maximum (and minimum) beam stresses for cases 2 ($G_y = -20.6$ $G_x = 21.2$) and 4 ($G_y = -20.6$ $G_z = 19.6$) are adjusted per refined section properties (accounting for increase in section width), with corrected values shown. Maximum beam stress is 8876 psi, in the sidemount, producing a MS of +2.15. Tables 2 through 9 present summarized MS and stresses for individual component hardware for load cases 1 through 4.

The first natural frequency of the METSAT AMSU-A1 Module is predicted at 101.7 Hz. As shown in Figure 18, the top panel canopy over the sidemount flexes to produce the first mode. Figures 18 through 27 identify the 1st seven non-rigid body modes. Modes 2 (108.9 Hz), 3 (109.0 Hz), 4 (109.4 Hz), and 5 (109.7 Hz) are all the result of the lower card cage cards flexing in the lower card cage. Mode 6 (116.4 Hz) in Figures 23 through 25 shows the power control/monitor circuit board movement (Figure 23), along with the upper aft, top, and radiator panels distortions (Figure 24), with both reflectors, and the lower baseplate and lower shelf being agitated in Figure 25. Mode 6 is a rocking of the entire structure about the Aerojet METSAT yz-plane. Mode 7 (120.2 Hz) shows pronounced movement in the upper aft panel, top panel, radiator panel, lower right panel, and reflectors. The analysis demonstrates a slight margin over the 100 Hz threshold.

A stress analysis of the primary structure of the METSAT AMSU-A1 Module has been performed using the random vibration spectrum given in Appendix E, Section 1.3, of the GSFC 422-S-79 PAR. Combined with factors of safety of 1.4 ultimate, 1.25 yield, the random vibration minimum margins of safety summary is given in Table 10. RMS stress levels are taken to the '3 Sigma' level ($3.0 \times$ stress at 8.8 GRMS load), multiplied by factors of safety (1.25 yield, 1.4 ultimate), and compared to material yield and ultimate strengths. All positive margins result from this task, with the highest loaded region being the sidemount with margin of safety +0.16. Minimum margins of safety are given per the three individual loadings in Tables 11 through 13.

Transmissibility's of various regions of the NASTRAN model are identified in the Transmissibility Summary Table of Appendix E. 'Q' levels resulting from application of the qualification level random vibration spectrum (8.8 GRMS) with critical damping of 7% are tabulated per component per loading condition. Large 'Q'-values (>4) are found at the power control/monitor bracket (Z-load, Y-response $Q = 8.5$), the upper right front support panel (Y-load, Y-response $Q = 7.2$), the upper reflector (X-load, Z-response $Q = 7.1$), the lower reflector (X-load, X-response $Q = 6.6$), the left panel (Y-load, Y-response $Q = 4.6$), the lower warmload (Y-load, Y-response $Q = 4.1$), and the radiator panel (X-load, X-response $Q = 4.0$). This information agrees well with the NOAA AMSU-A1 test data used to predict the applicable damping. Per NOAA testing, a Q of 7 was measured at the reflectors. Note that the power control/monitor is hardware new to the AMSU design in METSAT/EOS.

The rattlespace of the circuit cards of the upper and lower card cages is investigated per qualification level random vibration spectrum (8.8 GRMS). Per Table 14, the more severe condition occurs at the lower card cage where minimum card spacing is 0.037 inches and calculated maximum displacement is 0.025 inches at the 3 Sigma level ($3.0 \times$ displacement at 8.8 GRMS load). At the upper card cage, minimum spacing is 0.137 inches, with maximum 3 Sigma displacement of 0.002 inches. There will be no contact of adjacent circuit cards in either card cage.

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Mounting bolt stress results identify an overall minimum margin of safety of +0.11 for the condition of bolt tensile stress (with all shear reacted at the shear pins) per design load cases. Additionally, interactive tension plus shear stress (with shear reacted at mounting bolts plus shear pins), bearing and shear tearout in the sidemount at the 2 shear pins (all shear at shear pins), joint member compression, thread shear, and sidemount bearing and shear tearout at the 16 mounting bolts, all identify no margins less than +0.14.

Based on the large margins of safety per static and random vibration loads application, the AMSU-A1 Module will maintain structural integrity in the METSAT launch environment.

SECTION 3

REFERENCE DOCUMENTS

The following documents were used in the preparation of this Report:

SPECIFICATIONS

GSFS-S-480-79 October 10, 1994	Performance Assurance Requirements for the Earth Observing System (EOS) & Meteorological Satellites Project (METSAT) Advanced Microwave Sounding Units - A
GSFC 422-11-12-01 Rev. A January 1994	General Interface Requirements Document (GIRD) for EOS Common Spacecraft/Instruments EOS PM Project

Aerojet

Report 10381 June 1995	Earth Observing System (EOS)/ Advanced Microwave Sounding Unit-A (AMSU-A) Stress Analysis Report, A1 Module
Report 10381 Addendum 1 February 1996	Earth Observing System (EOS)/ Advanced Microwave Sounding Unit-A (AMSU-A) Stress Analysis Report, A1 Module

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SECTION 4

METHOD OF ANALYSIS

4.1 FINITE ELEMENT MODEL

Figures 28 through 31 display the NASTRAN finite element model of the METSAT AMSU-A1 structure. The basic coordinate system used in the METSAT analysis is identical to that used in the EOS analysis (Ref. Aerojet Report 10381). This orientation differs from the METSAT PAR document which utilizes the spacecraft coordinate system identified on GE ATN Spacecraft Assembly Drawing 3278200. A comparison of systems follows:

Aerojet METSAT Coordinate Sys.	GSFC-S-79 PAR Coordinate Sys.
+X-Axis	-Y-Axis
+Y-Axis	-Z-Axis
+Z-Axis	+X-Axis

The METSAT AMSU-A1 finite element model is a modification of the EOS AMSU-A1 finite element model. The METSAT AMSU-A1 Module is mounted to the spacecraft through a sidemount bracket. The EOS AMSU-A1 Module is mounted from the lower baseplate. The design of the primary structure is essentially the same for the two units except for the following:

- (1) Lower Baseplate - Different designs and drawings.
- (2) Sidemount - Only on METSAT.
- (3) Top Panel - Different designs and drawings.
- (4) Left Panel - Different designs and drawings.
- (5) Radiator Panel - Only on METSAT.
- (6) Signal Processor - METSAT has 2 Cards in Upper Card Cage.
EOS Upper Card Cage is empty. METSAT has 4 different
Cards in Lower Card Cage.
- (7) Power Control/Monitor - Different designed enclosure and connectors.
- (8) Insulation and Mirror Tile representations - Modified.

The NASTRAN finite element model prepared for EOS AMSU-A1 and shown in Aerojet Report 10381 is modified for the METSAT AMSU-A1 design. In the current METSAT effort, a more refined NASTRAN model has been developed to more accurately represent the METSAT. The model statistics are:

9095	Grids
1032	Bar/Beam Elements
8089	Rectangular Plate Elements
664	Triangular Plate Elements
385	Point Mass Elements

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The total mass of the model is 119.2 pounds (54.1 Kg). Mass properties, in the Aerojet METSAT Coordinate System Axes, at the center of gravity, are shown below. The cg is measured relative to the sidemount lower corner on the spacecraft side by the lower reflector (GRID 7508).

Mass	119.2 lb. (54.1 kg)	
Center of Gravity		
x	15.213 in	(0.386 m)
y	8.839	(0.225)
z	9.918	(0.25)
Moment of Inertia (@ cg)		
Ixx	7336 lb-in ²	(2.147 kg-m ²)
Ixy	36	(0.011)
Ixz	1799	(0.526)
Iyx	36	(0.011)
Iyy	12574	(3.679)
Iyz	151	(0.044)
Izx	1799	(0.526)
Izy	151	(0.044)
Izz	9100	(2.663)

Appendix A presents a detailed description of the METSAT NASTRAN finite element model.

4.2 BOUNDARY CONDITIONS

The model is constrained along the three orthogonal axes on the sidemount at each of the 16 spacecraft mounting bolt locations and along the two transverse axes (X and Z in Figure 28) at the 2 dowel pin locations. The constraints are imposed using NASTRAN single point constraint cards.

4.3 LOAD APPLICATION

Eight combinations of design loads are evaluated. Referencing Appendix E, Section 1.2, PAR individual loads, Load Cases 1 through 8 in the Aerojet METSAT Coordinate System are:

Load Case	Loading
1	Gy=-20.6, Gx=-21.2
2	Gy=-20.6, Gx= 21.2
3	Gy=-20.6, Gz=-19.6
4	Gy=-20.6, Gz= 19.6
5	Gy= 20.6, Gx=-21.2
6	Gy= 20.6, Gx= 21.2
7	Gy= 20.6, Gz=-19.6
8	Gy= 20.6, Gz= 19.6

With the exception of algebraic sign, Load Cases 1, 2, 3, and 4 are identical to Load Cases 6, 5, 8, and 7, respectively. Thus only Cases 1 through 4 are evaluated.

For the random vibration loadings (Ref. Appendix E, Section 1.3, PAR), the qualification level (8.8 GRMS) power spectral density spectrum is applied along the three orthogonal axes. Three load cases are run, each load case representing the random spectrum in one of the axes shown in Figure 28.

The random vibration analysis is performed using the NASTRAN code with a type "G" structural damping value of 0.14. The critical damping percentage is 1/2 of this value, or 7%. For large Q, the amplification or quality factor, Q, is approximated by

$$Q = 1/[2(c/c_c)] \quad c/c_c = \text{fraction of critical damping}$$

With c/c_c equal to 0.07, an amplification, Q, of 7.14 is determined. A $Q = 7.14$ corresponds to the largest Q found in test data of the NOAA AMSU-A1 unit. To the stresses derived from the NASTRAN random vibration stress output, a 3.0 factor is applied to produce "3 Sigma" values, plus an additional factor of safety (FS) of 1.25 on yield or 1.4 on ultimate is also employed.

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SECTION 5

RESULTS

The finite element model is primarily made up of beam (NASTRAN CBAR and CBEAM) elements, shell (NASTRAN CQUAD4 and CTRIA3) elements, and point (NASTRAN CONM2) elements. The maximum von Mises stresses for plate elements and the maximum and minimum principal stresses for beam elements are used for margins of safety calculations. For the static loads analyses, the output from each evaluated load case (cases 1 through 4) is reviewed, with contour plots drawn up per structural component for the shell elements, and maximum/minimum stress plots constructed for the beam elements. The static load cases contour and stress plots are included in Appendix C.

The stresses shown in Tables 2 through 8 are summarized results of the structural component contour and stress plots. The stresses are multiplied by 1.25 to calculate the yield margins of safety and by 1.4 to calculate the ultimate margins of safety. Table 1 shows the overall highest stresses and lowest margins of Tables 2 through 8 for the static design loads.

The first 7 non-rigid body natural frequency mode shapes are depicted in Figures 18 through 27, from analysis using the 'large mass method' in the finite element model. To demonstrate the mathematical soundness of the NASTRAN model, the model is subjected to a stiffness-equilibrium check similar to the EOS requirement of GSFC 422-11-12-01 Paragraph 11.1.4.i Deliverable Model Validity Check. The METSAT model is shown to satisfy this check, with the normalized KFFRN matrix empty (see Appendix B).

For the random vibration loading, the output from each orthogonal axis load case is reviewed. The maximum principal stresses for plate elements and beam elements are used for margins of safety calculations. For plate elements, the normal and shear stresses are assumed in phase in calculating the principal stresses. Likewise, for bar elements, the axial and bending components are also considered to be in phase, and are thus algebraically added together.

The stresses shown in Tables 11 through 13 are statistical '3 Sigma' stress levels, and are the results of the random vibration spectrum (qualification level, 8.8 GRMS) orthogonal loading cases, with 3.0 multiplication factors employed. These '3 Sigma' stresses are then multiplied by 1.25 to calculate the yield margins of safety and by 1.4 to calculate the ultimate margins of safety. Tables 11 through 13 present the worst case stresses for the groups of elements representing the structural components of the primary structure. The tables give the results for each of the three load cases. Table 10 summarizes the minimum margins for the three cases. The worst axis of load application depends on the orientation of the structural item. Appendix D contains an extensive random vibration stress table, identifying the stress levels for the elements evaluated, for each orthogonal load direction.

The transmissibility's ('Q' levels) shown in Appendix E are the result of the output level GRMS acceleration divided by the input level GRMS acceleration (8.8 GRMS per qualification level), for critical damping at 7%. Output per Appendix E consists of the RMS response ('RMS' in units of $(\text{in}/\text{sec}^2)^2$), the GRMS response ('GRMS' in units of G's), and the transmissibility's Q (response GRMS divided by input GRMS). Plots of the input spectrums are shown in Figures 32 through 34 for the X, Y, and Z loadings, respectively, identifying 8.84 GRMS input levels.

The rattlespace calculations are tabulated in Appendix E for both upper and lower card cage circuit cards. Circuit card displacements per '3 Sigma' random vibration loadings per orthogonal axis are listed. The use of MPC elements between adjacent modeled circuit cards in the NASTRAN finite element model is made in determining the remaining gaps between cards.

Hand analysis is included in the report on the subject of sidemount beam cross sections. The finite element model solution contains excessively conservative sidemount beam stresses which are modified in the hand analysis. Consideration is given to the extensively larger cross sections at the bulkhead junctions. Modified maximum (and minimum) beam stresses for cases 2 ($G_y = -20.6$ $G_x = 21.2$) and 4 ($G_y = -20.6$ $G_z = 19.6$) are adjusted per refined section properties (accounting for increase

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in section width), with corrected values shown. Maximum beam stress is 8876 psi in the sidemount, producing a MS of +2.15. Figures 35 and 36 display the sidemount model. Figures 37 through 42 show the NASTRAN stresses for case 4, while Figures 43 through 48 show NASTRAN stresses for case 2.

Mounting bolt hand calculated stress analysis is included for the sixteen #10-32UNF mounting screws (and two .375 dia. shear pins). Interactive tension plus shear stress checks are performed on the 16 screws for the 8 design load cases, summarized in Tables 15 through 18, with resulting minimum margin +0.14 (Table 18). Bearing and shear tearout calculations in the sidemount at the 2 shear pins, assuming all shear is taken out only at the 2 pins, shows a minimum margin of +0.23 (Table 19). Mounting bolt tensile stresses, per the same shear reaction assumption, show a +0.11 minimum margin of safety (see Table 21 of Tables 20 through 23). Additional stress calculations for joint member compression, thread shear, and sidemount bearing and shear tearout at the 16 mounting bolts, identify no margins less than +0.69 (Tables 24 and 25).

5.1 1331552-1 SIDEMOUNT STATIC STRESSES

A summer of beam and shell stresses for the 4 load cases considered shows the following stresses. Shell stresses are Von Mises stresses per contour plots, beam stresses are maximum ($P/A + Mc/I$) or minimum ($P/A - Mc/I$) stresses

Case	Loads	Shell	Beam
1	Gy = -20.6 Gx = -21.2	9892 psi	7690 psi
2	Gy = -20.6 Gx = 21.2	16940	27863
3	Gy = 20.6 Gz = -19.6	9836	4732
4	Gy = -20.6 Gz = 19.6	22234	30993

The shell element contour plots (Von Mises stress) and the beam element maximum and minimum stress plots support this data.

The sidemount is primary constructed of shell elements, with beam elements used only for the 2 angled bulkhead flanges (sections M-M and V-V of 1331552-1).

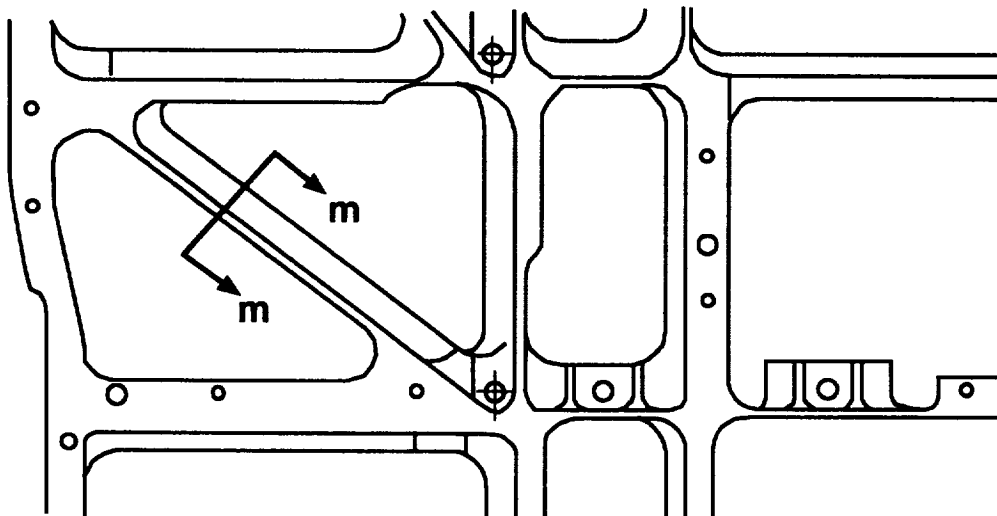
With sidemount material 6061-T6 aluminum, (FTY = 35000 psi, FTU = 42000 psi) the beam stress levels of cases 2 and 4 identify marginal and overstressed conditions when factors of safety (1.25 yield, 1.4 ultimate) are applied.

Case	Shell		Beam	
	MS Yield	MS Ult	MS Yield	MS Ult
1	1.8	2.0	2.6	2.9
2	.65	.77	.005	.08
3	1.8	2.0	4.9	5.3
4	.26	.35	-.10	-.03

However, the finite element model fails to provide the increase in beam section properties seen at the fillet radii along the ends of sections M-M and V-V.

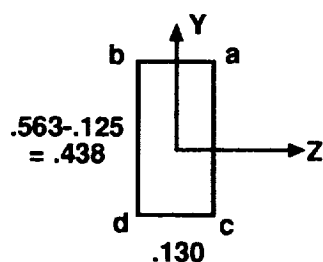
Consideration of the increased cross sections follows, raising considerably the sidemount beam element margins of safety and eliminating all negative margins.

Shell element stresses will remain as reported by the contour plots.



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Properties utilized for beam elements 10023-10034 representing the flange of the lower angled bulkhead are

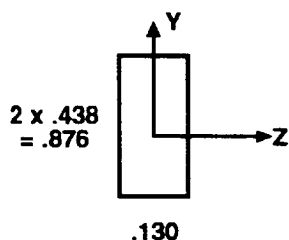


$$A = (.438) (.130) = .05694 \text{ in}^2$$

$$I_{yy} = (.438) (.130)^3 / 12 = .00008019 \text{ in}^4$$

$$I_{zz} = (.130) (.438)^3 / 12 = .0009103 \text{ in}^4$$

Locally, at the lower end (elem 10023) the fillet radius would increase the cross section y-length by at least a factor of 2.



$$\text{New } I_{yy} = (2 \times .438) (.130)^3 / 12 = .0001604 \text{ in}^4$$

$$\text{New } I_{zz} = (.130) (2 \times .438)^3 / 12 = .007282 \text{ in}^4$$

$$\text{New } A = .11388 \text{ in}^2$$

From the case 4 elem 10023 stress data

$$\frac{M_{zcy}}{I_{zz}} = \frac{28726 + 24238}{2} = 26482 \text{ psi}$$

$\frac{C_y}{I_{zz}}$ is decreased by a factor of 4

$$\text{New } \frac{M_{zcy}}{I_{zz}} = \frac{26482}{4} = 6621 \text{ psi}$$

$$\frac{M_y c_z}{I_{yy}} = \frac{28726 - 24238}{2} = 2244 \text{ psi}$$

$\frac{c_z}{I_{yy}}$ is decreased by a factor of 2

$$\text{New } \frac{M_y c_z}{I_{yy}} = \frac{2244}{2} = 1122 \text{ psi}$$

$$\frac{P}{A} = 2267 \text{ psi}$$

New A is increased by a factor of 2

$$\text{New } \frac{P}{A} = 1134 \text{ psi}$$

New maximum $\frac{P}{A} + \frac{M_c}{I}$ at -x end of EL10023

$$s = 1134 + (6621 + 1122) = 8876 \text{ psi} \quad \text{Case 4}$$

$$MS = \frac{35000}{1.25 \times 8876} - 1 = +2.2 \text{ Yield}$$

$$MS = \frac{42000}{1.4 \times 8876} - 1 = +2.4 \text{ Ultimate}$$

Similarly for Case 2

$$\text{New } \frac{M_z c_y}{I_{zz}} = \frac{25942 + 19872}{4 \times 2} = 5727 \text{ psi}$$

$$\text{New } \frac{M_y c_z}{I_{yy}} = \frac{25942 - 19872}{2 \times 2} = 1518 \text{ psi}$$

$$\text{New } \frac{P}{A} = \frac{1921}{2} = 961 \text{ psi}$$

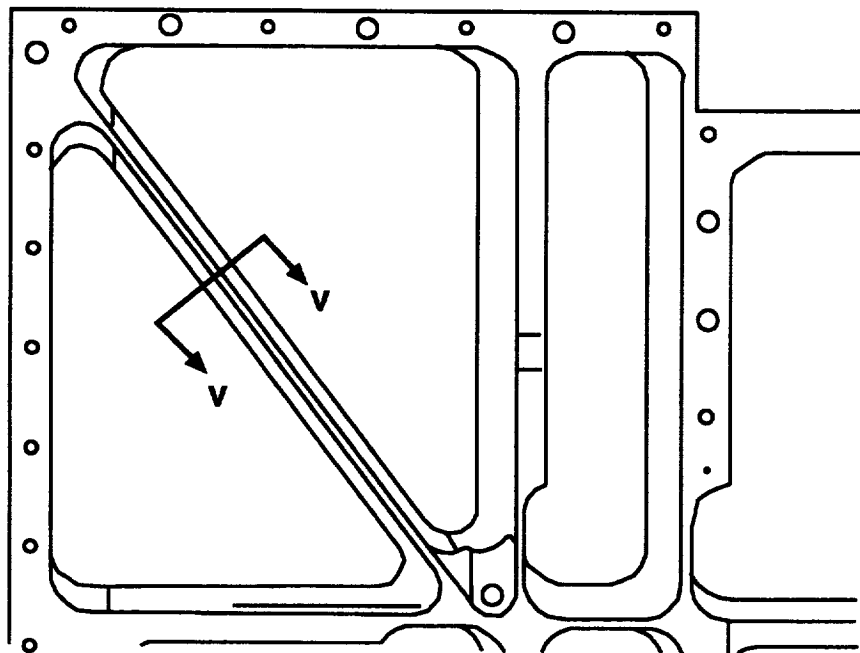
$$s = 961 + (5727 + 1518) = 8205 \text{ psi} \quad \text{Case 2}$$

$$MS = \frac{35000}{1.25 \times 8205} - 1 = +2.4 \text{ Yield}$$

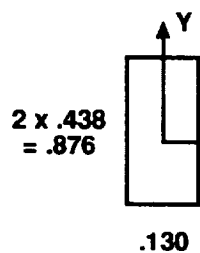
$$MS = \frac{42000}{1.4 \times 8205} - 1 = +2.7 \text{ Ultimate}$$

Cases 1 and 3 show low finite element stresses at EL10023 and will not be recalculated.

Section V-V



396-3115M



Similarly, at the ends (EL10005 and EL10022) the fillet radii would increase the cross-section Y-length by at least a factor of 2.

New Y = 2 x .50

From case 4 elem 10005 stress data

$$\text{New } \frac{M_z c_y}{I_{zz}} = \frac{18763 + 10047}{4 \times 2} = 3601 \text{ psi}$$

$$\text{New } \frac{M_y c_z}{I_{yy}} = \frac{18763 - 10047}{2 \times 2} = 2179 \text{ psi}$$

$$\text{New } \frac{P}{A} = \frac{1158}{2} = 579 \text{ psi}$$

$$\text{New } \sigma = 579 + (3601 + 2179) = 6359 \text{ psi Case 4}$$

$$MS = \frac{35000}{1.25 \times 6359} - 1 = +3.4 \text{ Yield}$$

$$MS = \frac{42000}{1.4 \times 6359} - 1 = +3.7 \text{ Ultimate}$$

Similarly for case 2 elem 10005

$$\text{New } \sigma = \frac{243}{2} + \left(\frac{13179 + 9017}{4 \times 2} + \frac{13179 - 9017}{2 \times 2} \right) = 3937 \text{ psi}$$

$$\text{MS} = \frac{35000}{1.25 \times 3937} - 1 = +6.1 \text{ Yield}$$

$$\text{MS} = \frac{42000}{1.4 \times 3937} - 1 = +6.6 \text{ Ultimate}$$

Cases 1 and 3 show low finite element stresses at EL10005 and 10022 and will not be modified.

Stresses in Bar Elements (Page 1 of 8)

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METSAT AMSU-1 DESIGN STRESS CASES 1-8
DESIGN_GY--20.6_GX--21.2

SUBCASE 1

ELEMENT ID.	S A 1		S T R E S S E S I N		B A R E L E M E N T S		(C B A R)		S A - M I N		M . S . - T	
	S A 1 S B 1	S A 2 S B 2	S A 3 S B 3	S A 4 S B 4	AXIAL STRESS	S A - M A X S B - M A X	S A - M I N S B - M I N	S A - M I N S B - M I N	M . S . - T M . S . - C			
10005	-5.026560E+03 4.153885E+01	1.681530E+03 -1.490638E+03	-1.681530E+03 1.490638E+03	5.026560E+03 -4.153885E+01	-9.753276E+02	4.051232E+03 5.153100E+02	-6.001080E+03 -2.465965E+03	-6.001080E+03 -2.465965E+03				
10006	7.085755E+01 -8.566007E+02	-1.628750E+03 -6.938579E+02	1.628750E+03 6.938579E+02	-7.085755E+01 8.566007E+02	-8.558413E+02	7.729086E+02 7.593994E-01	-2.484591E+03 -1.712442E+03	-2.484591E+03 -1.712442E+03				
10007	-8.785814E+02 -3.933358E+02	-5.903161E+02 -5.584509E+02	5.903161E+02 5.584509E+02	8.785814E+02 3.933358E+02	-7.045216E+02	1.740598E+02 -1.460707E+02	-1.583103E+03 -1.262973E+03	-1.583103E+03 -1.262973E+03				
10008	-3.931467E-02 -2.471412E+02	-3.404928E+02 -2.745595E+02	5.404928E+02 2.745595E+02	3.991467E+02 2.471412E+02	-6.349166E+02	-9.443372E+01 -3.603571E+02	-1.175399E+03 -9.094761E+02	-1.175399E+03 -9.094761E+02				
10009	-2.536203E+02 -4.936184E+01	-2.440400E+02 -4.756143E+01	2.440400E+02 4.756143E+01	2.536203E+02 4.936184E+01	-5.977054E+02	-3.440851E+02 -5.483436E+02	-8.513257E+02 -6.470673E+02	-8.513257E+02 -6.470673E+02				
10010	-5.208598E-01 9.334925E+01	-3.472591E+01 1.511089E+02	3.472591E+01 -1.511089E+02	5.208598E+01 -9.334925E+01	-5.954403E+02	-5.433543E+02 -4.443314E+02	-6.475263E+02 -7.465492E+02	-6.475263E+02 -7.465492E+02				
10011	9.050446E+01 2.275107E-02	1.645163E+02 3.042599E+02	-1.645163E+02 -3.042599E+02	-9.050446E+01 -2.275107E+02	-5.889509E+02	-4.244345E+02 -2.846910E+02	-7.534672E+02 -8.932108E+02	-7.534672E+02 -8.932108E+02				
10012	2.242168E+02 3.211151E+02	3.197787E+02 4.317440E+02	-3.197787E+02 -4.317440E+02	-2.242168E+02 -3.211151E+02	-5.922707E+02	-2.724920E+02 -1.605267E+02	-9.120494E+02 -1.024015E+03	-9.120494E+02 -1.024015E+03				
10013	3.181110E+02 3.886863E+02	4.458878E+02 5.185964E+02	-4.458878E+02 -5.185964E+02	-3.181110E+02 -3.886863E+02	-5.961154E+02	-1.502276E+02 -7.751892E+01	-1.042003E+03 -1.114712E+03	-1.042003E+03 -1.114712E+03				
10014	3.864321E-02 4.252269E+02	5.292280E+02 5.656667E+02	-5.292280E+02 -5.656667E+02	-3.864321E+02 -4.252269E+02	-5.980532E+02	-6.882526E+01 -3.238654E+01	-1.127281E+03 -1.163720E+03	-1.127281E+03 -1.163720E+03				
10015	4.239836E+02 4.259099E+02	5.715242E+02 5.753568E+02	-5.715242E+02 -5.753568E+02	-4.239836E+02 -4.259099E+02	-5.960583E+02	-2.453412E+01 -2.070154E+01	-1.167583E+03 -1.171413E+03	-1.167583E+03 -1.171413E+03				
10016	4.258422E+02 3.993827E-02	5.756661E+02 5.413170E+02	-5.756661E+02 -5.413170E+02	-4.258422E+02 -3.993827E+02	-5.883173E+02	-1.265118E+01 -4.700031E+01	-1.163983E+03 -1.129634E+03	-1.163983E+03 -1.129634E+03				
10017	4.008624E+02 3.393138E-02	5.343531E+02 4.668770E+02	-5.343531E+02 -4.668770E+02	-4.008624E+02 -3.393138E+02	-5.714355E+02	-3.708240E+01 -1.045585E+02	-1.105789E+03 -1.038313E+03	-1.105789E+03 -1.038313E+03				
10018	3.423717E+02 2.497369E+02	4.524743E+02 3.504913E+02	-4.524743E+02 -3.504913E+02	-3.423717E+02 -2.497369E+02	-5.396230E+02	-8.714868E+01 -1.891317E+02	-9.920973E+02 -8.901143E+02	-9.920973E+02 -8.901143E+02				
10019	2.547869E+02 1.600430E-02	3.266873E+02 1.716080E+02	-3.266873E+02 -1.716080E+02	-2.547869E+02 -1.600430E+02	-4.851486E+02	-1.584613E+02 -3.135405E+02	-8.118358E+02 -6.567566E+02	-8.118358E+02 -6.567566E+02				
10020	1.678883E-02 -4.108814E-01	1.366492E+02 1.263473E+01	-1.366492E+02 -1.263473E+01	-1.678883E+02 4.108814E+01	-4.125005E+02	-2.446123E+02 -3.714124E+02	-5.803808E+02 -4.535807E+02	-5.803808E+02 -4.535807E+02				
10021	-3.091671E+01 -2.735662E+01	-3.531681E+01 -2.932815E+02	3.531681E+01 2.932815E+02	3.091671E+01 2.735662E+01	-3.225514E+02	-2.072346E+02 -2.926990E+01	-3.578682E+02 -6.158328E+02	-3.578682E+02 -6.158328E+02				
10022	-2.783433E+01 2.277987E-02	-2.910235E+02 -9.469464E+02	2.910235E+02 9.469464E+02	2.783433E+01 -2.277987E+02	-1.468071E+01	2.763428E+02 9.322656E+02	-3.057042E+02 -9.616271E+02	-3.057042E+02 -9.616271E+02				

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1996

FEBRUARY 28,

SUBCASE 1

DESIGN CASES 1-8

DESIGN_GY=-20.6_CX=-21.2

SA1
SB1

SA2
SB2

SA3
SB3

SA4
SB4

SA-MIN
SB-MIN

SA-MAX
SB-MAX

M.S.-T
M.S.-C

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MSC/NASTRAN

1996

FEBRUARY 28,

SUBCASE 1

DESIGN CASES 1-8

DESIGN_GY=-20.6_CX=-21.2

SA1
SB1

SA2
SB2

SA3
SB3

SA4
SB4

SA-MIN
SB-MIN

SA-MAX
SB-MAX

M.S.-T
M.S.-C

ELEMENT ID.	STRESS IN		BAR ELEMENTS		(C B A R)		SA-MIN		M.S.-T	
	SA1 SB1	SA2 SB2	SA3 SB3	SA4 SB4	AXIAL STRESS	SA-MAX SB-MAX	SA-MIN SB-MIN	SA-MIN SB-MIN	M.S.-T M.S.-C	M.S.-C
10023	7.430315E+03 -3.345159E+03	6.970602E+03 -2.317725E+03	-6.970602E+03 2.317725E+03	-7.430315E+03 3.345159E+03	2.600371E+02	7.690353E+03 3.605196E+03	-7.170278E+03 -3.085122E+03	-7.170278E+03 -3.085122E+03		
10024	2.289616E+02 -4.389431E+02	6.447023E+02 1.003154E+02	-6.447023E+02 -1.003154E+02	-2.289616E+02 4.389431E+02	-5.145459E+02	1.301564E+02 -7.560278E+01	-1.159248E+03 -9.534890E+02	-1.159248E+03 -9.534890E+02		
10025	-3.253955E+02 5.849629E+01	-4.725442E+01 2.278476E+02	4.725442E+01 -2.278476E+02	3.285955E+02 -5.849629E+01	-4.651855E+02	-1.365900E+02 -2.373379E+02	-7.937810E+02 -6.930331E+02	-7.937810E+02 -6.930331E+02		
10026	-1.510992E+01 1.275475E-02	-1.279069E+01 9.551816E+01	1.279069E+01 -9.551816E+01	1.510992E+01 -1.275475E-02	-4.154091E+02	-4.002992E+02 -2.878616E+02	-4.305191E+02 -5.429567E+02	-4.305191E+02 -5.429567E+02		
10027	1.800460E+02 2.015365E+02	-4.936353E+01 3.035694E+01	4.936353E+01 -3.035694E+01	-1.800460E+02 2.015365E+02	-4.002454E+02	-2.201994E+02 -1.987089E+02	-5.802913E+02 -6.017818E+02	-5.802913E+02 -6.017818E+02		
10028	3.116667E+02 2.500450E+02	-1.105858E+02 -1.511591E+01	1.105858E+02 1.511591E+01	-3.116667E+02 2.500450E+02	-3.944570E+02	-8.279111E+01 -1.444128E+02	-7.061245E+02 -6.445028E+02	-7.061245E+02 -6.445028E+02		
10029	3.707303E-02 3.190119E-02	-1.782621E+02 7.446406E+00	1.782621E+02 -7.446406E+00	-3.707303E+02 3.190119E+02	-3.829100E+02	-1.217969E+01 -5.389810E+01	-7.536403E+02 -7.019219E+02	-7.536403E+02 -7.019219E+02		
10030	4.059351E+02 3.810161E+02	-1.890171E+02 6.711440E+01	1.890171E+02 -6.711440E+01	-4.059351E+02 3.810161E+02	-3.592325E+02	4.670261E+01 2.178360E+01	-7.651676E+02 -7.402487E+02	-7.651676E+02 -7.402487E+02		
10031	3.868350E+02 4.277279E-02	-1.689839E+02 1.701658E+02	1.689839E+02 -1.701658E+02	-3.868350E+02 4.277279E+02	-3.124817E+02	7.435333E+01 1.152462E+02	-6.993167E+02 -7.402096E+02	-6.993167E+02 -7.402096E+02		
10032	2.695292E-02 5.028542E-02	-1.503929E+02 3.743575E+02	1.503929E+02 -3.743575E+02	-2.695292E+02 5.028542E+02	-2.156225E+02	5.390674E+01 2.872317E+02	-4.851517E+02 -7.104767E+02	-4.851517E+02 -7.104767E+02		
10033	3.590339E+01 3.534525E+02	-5.880330E+01 4.642621E+02	5.880330E+01 -4.642621E+02	-3.590339E+01 3.534525E+02	-4.726670E+01	1.153859E+01 4.169954E+02	-1.060700E+02 -5.115288E+02	-1.060700E+02 -5.115288E+02		
10034	-2.820326E+02 -7.699332E-02	9.847334E+01 -4.871516E+01	-9.847334E+01 4.871516E+01	2.820326E+02 7.699332E+02	1.036430E+02	3.856964E+02 3.739970E+02	-1.783688E+02 -6.662694E+02	-1.783688E+02 -6.662694E+02		

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METSAT ANSUAL DESIGN STRESS CASES 1-8
DESIGN_GY--20.6_GX-21.2

SUBCASE 2

ELEMENT ID.	S T R E S S E S I N B A R E L E M E N T S		(C D A R)		S A - M I N		M . S . - T	
	SA1 SB1	SA2 SB2	SA3 SB3	SA4 SB4	AXIAL STRESS	SA-MAX SB-MAX	SA-MIN SB-MIN	M.S.-T M.S.-C
10005	-1.317903E+04 3.559071E+03	9.017236E+03 -1.543366E+03	-9.017236E+03 1.543366E+03	1.317903E+04 -3.559071E+03	-2.435408E+02	1.293549E+04 3.315530E+03	-1.342257E+04 -3.802612E+03	
10006	3.634784E+03 -3.378374E+02	-1.900124E+03 7.200316E+02	1.900124E+03 -7.200316E+02	-3.634784E+03 3.378374E+02	-2.449289E+02	3.389855E+03 4.751027E+02	-3.879713E+03 -9.649606E+02	
10007	-3.654736E+02 3.21887E-02	8.502471E+02 1.762906E+02	-8.502471E+02 -1.762906E+02	3.654736E+02 -3.21887E+02	-1.459734E+02	7.042736E+02 1.759133E+02	-9.962205E+02 -4.678602E+02	
10008	3.399961E+02 -3.038352E+00	9.096317E+01 7.879894E+01	-9.096317E+01 -7.879894E+01	-3.399961E+02 3.038352E+00	-1.714574E+02	1.685387E+02 -9.265844E+01	-5.114535E+02 -2.502563E+02	
10009	4.324415E+00 -1.202745E+02	4.410974E+01 -1.252885E+02	-4.410974E+01 1.252885E+02	-4.324415E+00 1.202745E+02	-1.872064E+02	-1.430966E+02 -6.191788E+01	-2.313161E+02 -3.124949E+02	
10010	-1.147473E+02 -2.460846E-02	-1.513249E+02 -2.710208E+02	1.513249E+02 2.710208E+02	1.147473E+02 2.460846E+02	-2.003890E+02	-4.908412E+01 7.063171E+01	-3.517140E+02 -4.714098E+02	
10011	-2.411309E+02 -3.430493E+02	-2.943694E+02 3.882843E+02	2.943694E+02 3.882843E+02	2.411309E+02 3.430493E+02	-2.076921E+02	8.667726E+01 1.805922E+02	-5.020615E+02 -5.959764E+02	
10012	-3.375142E+02 -4.123183E+02	-4.143612E+02 4.740062E+02	4.143612E+02 4.740062E+02	3.375142E+02 4.123183E+02	-2.098398E+02	2.045215E+02 2.641664E+02	-6.242010E+02 -6.838459E+02	
10013	-4.071598E+02 -4.502653E-02	-4.983000E+02 -5.227850E+02	4.983000E+02 5.227850E+02	4.071598E+02 4.502653E+02	-2.091488E+02	2.891512E+02 3.136362E+02	-7.074488E+02 -7.319338E+02	
10014	-4.458512E+02 -4.548217E+02	-5.436116E+02 -5.325181E+02	5.436116E+02 5.325181E+02	4.458512E+02 4.548217E+02	-2.070695E+02	3.365421E+02 3.254486E+02	-7.506811E+02 -7.395876E+02	
10015	-4.514497E+02 -4.272234E-02	-5.684066E+02 -5.004659E+02	5.684066E+02 5.004659E+02	4.514497E+02 4.272234E+02	-2.041975E+02	3.442091E+02 2.962684E+02	-7.526041E+02 -7.046633E+02	
10016	-4.251235E+02 -3.631778E-02	-5.103304E+02 -4.281220E+02	5.103304E+02 4.281220E+02	4.251235E+02 3.631778E+02	-2.004549E+02	3.098955E+02 2.276671E+02	-7.108052E+02 -6.285769E+02	
10017	-3.626246E+02 -2.644686E+02	-4.307345E+02 -3.133423E+02	4.307345E+02 3.133423E+02	3.626246E+02 2.644686E+02	-1.954662E+02	2.352683E+02 1.178761E+02	-6.262007E+02 -5.088084E+02	
10018	-2.656670E+02 -1.319652E+02	-3.076984E+02 -1.548494E+02	3.076984E+02 1.548494E+02	2.656670E+02 1.319652E+02	-1.882481E+02	1.194503E+02 -3.339868E+01	-4.959464E+02 -3.430374E+02	
10019	-1.347716E+02 5.081050E-01	-1.416214E+02 2.876359E+01	1.416214E+02 -2.876359E+01	1.347716E+02 -5.081050E+01	-1.776561E+02	-3.603467E+01 -1.268456E+02	-3.192775E+02 -2.284666E+02	
10020	4.504768E+01 1.908045E+02	5.591644E+01 3.067948E+02	-5.591644E+01 -3.067948E+02	-4.504768E+01 1.908045E+02	-1.640666E+02	-1.081502E+02 1.427282E+02	-2.199831E+02 -4.708614E+02	
10021	1.864614E+02 6.662257E+02	3.272579E+02 3.120918E+02	-3.272579E+02 -3.120918E+02	-1.864614E+02 -6.662257E+02	-1.546008E+02	1.726571E+02 5.116249E+02	-4.818587E+02 -6.208265E+02	
10022	6.549324E-02 4.589087E-01	3.652320E+02 1.322661E+03	-3.652320E+02 -1.302661E+03	-6.549324E+02 -4.589087E+01	-8.34724E+01	5.714851E+02 1.219214E+03	-7.383796E+02 -1.386108E+03	

Stresses in Bar Elements (Page 4 of 8)

FEBRUARY 28, 1996 MSC/ADDITION 01/28/96 SUBCASE 2

METSAT AMSUAL DESIGN STRESS CASES 1-8
DESIGN_GY--20.6_GN-21.2

ELEMENT ID.	S A I S B I		S A 2 S B 2		S A 3 S B 3		S A 4 S B 4		S A 5 S B 5		S A 6 S B 6		S A 7 S B 7		S A 8 S B 8		S A 9 S B 9		S A 10 S B 10		S A 11 S B 11		S A 12 S B 12		S A 13 S B 13		S A 14 S B 14		S A 15 S B 15		S A 16 S B 16		S A 17 S B 17		S A 18 S B 18		S A 19 S B 19		S A 20 S B 20		S A 21 S B 21		S A 22 S B 22		S A 23 S B 23		S A 24 S B 24		S A 25 S B 25		S A 26 S B 26		S A 27 S B 27		S A 28 S B 28		S A 29 S B 29		S A 30 S B 30		S A 31 S B 31		S A 32 S B 32		S A 33 S B 33		S A 34 S B 34		S A 35 S B 35		S A 36 S B 36		S A 37 S B 37		S A 38 S B 38		S A 39 S B 39		S A 40 S B 40		S A 41 S B 41		S A 42 S B 42		S A 43 S B 43		S A 44 S B 44		S A 45 S B 45		S A 46 S B 46		S A 47 S B 47		S A 48 S B 48		S A 49 S B 49		S A 50 S B 50		S A 51 S B 51		S A 52 S B 52		S A 53 S B 53		S A 54 S B 54		S A 55 S B 55		S A 56 S B 56		S A 57 S B 57		S A 58 S B 58		S A 59 S B 59		S A 60 S B 60		S A 61 S B 61		S A 62 S B 62		S A 63 S B 63		S A 64 S B 64		S A 65 S B 65		S A 66 S B 66		S A 67 S B 67		S A 68 S B 68		S A 69 S B 69		S A 70 S B 70		S A 71 S B 71		S A 72 S B 72		S A 73 S B 73		S A 74 S B 74		S A 75 S B 75		S A 76 S B 76		S A 77 S B 77		S A 78 S B 78		S A 79 S B 79		S A 80 S B 80		S A 81 S B 81		S A 82 S B 82		S A 83 S B 83		S A 84 S B 84		S A 85 S B 85		S A 86 S B 86		S A 87 S B 87		S A 88 S B 88		S A 89 S B 89		S A 90 S B 90		S A 91 S B 91		S A 92 S B 92		S A 93 S B 93		S A 94 S B 94		S A 95 S B 95		S A 96 S B 96		S A 97 S B 97		S A 98 S B 98		S A 99 S B 99		S A 100 S B 100		S A 101 S B 101		S A 102 S B 102		S A 103 S B 103		S A 104 S B 104		S A 105 S B 105		S A 106 S B 106		S A 107 S B 107		S A 108 S B 108		S A 109 S B 109		S A 110 S B 110		S A 111 S B 111		S A 112 S B 112		S A 113 S B 113		S A 114 S B 114		S A 115 S B 115		S A 116 S B 116		S A 117 S B 117		S A 118 S B 118		S A 119 S B 119		S A 120 S B 120		S A 121 S B 121		S A 122 S B 122		S A 123 S B 123		S A 124 S B 124		S A 125 S B 125		S A 126 S B 126		S A 127 S B 127		S A 128 S B 128		S A 129 S B 129		S A 130 S B 130		S A 131 S B 131		S A 132 S B 132		S A 133 S B 133		S A 134 S B 134		S A 135 S B 135		S A 136 S B 136		S A 137 S B 137		S A 138 S B 138		S A 139 S B 139		S A 140 S B 140		S A 141 S B 141		S A 142 S B 142		S A 143 S B 143		S A 144 S B 144		S A 145 S B 145		S A 146 S B 146		S A 147 S B 147		S A 148 S B 148		S A 149 S B 149		S A 150 S B 150		S A 151 S B 151		S A 152 S B 152		S A 153 S B 153		S A 154 S B 154		S A 155 S B 155		S A 156 S B 156		S A 157 S B 157		S A 158 S B 158		S A 159 S B 159		S A 160 S B 160		S A 161 S B 161		S A 162 S B 162		S A 163 S B 163		S A 164 S B 164		S A 165 S B 165		S A 166 S B 166		S A 167 S B 167		S A 168 S B 168		S A 169 S B 169		S A 170 S B 170		S A 171 S B 171		S A 172 S B 172		S A 173 S B 173		S A 174 S B 174		S A 175 S B 175		S A 176 S B 176		S A 177 S B 177		S A 178 S B 178		S A 179 S B 179		S A 180 S B 180		S A 181 S B 181		S A 182 S B 182		S A 183 S B 183		S A 184 S B 184		S A 185 S B 185		S A 186 S B 186		S A 187 S B 187		S A 188 S B 188		S A 189 S B 189		S A 190 S B 190		S A 191 S B 191		S A 192 S B 192		S A 193 S B 193		S A 194 S B 194		S A 195 S B 195		S A 196 S B 196		S A 197 S B 197		S A 198 S B 198		S A 199 S B 199		S A 200 S B 200		S A 201 S B 201		S A 202 S B 202		S A 203 S B 203		S A 204 S B 204		S A 205 S B 205		S A 206 S B 206		S A 207 S B 207		S A 208 S B 208		S A 209 S B 209		S A 210 S B 210		S A 211 S B 211		S A 212 S B 212		S A 213 S B 213		S A 214 S B 214		S A 215 S B 215		S A 216 S B 216		S A 217 S B 217		S A 218 S B 218		S A 219 S B 219		S A 220 S B 220		S A 221 S B 221		S A 222 S B 222		S A 223 S B 223		S A 224 S B 224		S A 225 S B 225		S A 226 S B 226		S A 227 S B 227		S A 228 S B 228		S A 229 S B 229		S A 230 S B 230		S A 231 S B 231		S A 232 S B 232		S A 233 S B 233		S A 234 S B 234		S A 235 S B 235		S A 236 S B 236		S A 237 S B 237		S A 238 S B 238		S A 239 S B 239		S A 240 S B 240		S A 241 S B 241		S A 242 S B 242		S A 243 S B 243		S A 244 S B 244		S A 245 S B 245		S A 246 S B 246		S A 247 S B 247		S A 248 S B 248		S A 249 S B 249		S A 250 S B 250		S A 251 S B 251		S A 252 S B 252		S A 253 S B 253		S A 254 S B 254		S A 255 S B 255		S A 256 S B 256		S A 257 S B 257		S A 258 S B 258		S A 259 S B 259		S A 260 S B 260		S A 261 S B 261		S A 262 S B 262		S A 263 S B 263		S A 264 S B 264		S A 265 S B 265		S A 266 S B 266		S A 267 S B 267		S A 268 S B 268		S A 269 S B 269		S A 270 S B 270		S A 271 S B 271		S A 272 S B 272		S A 273 S B 273		S A 274 S B 274		S A 275 S B 275		S A 276 S B 276		S A 277 S B 277		S A 278 S B 278		S A 279 S B 279		S A 280 S B 280		S A 281 S B 281		S A 282 S B 282		S A 283 S B 283		S A 284 S B 284		S A 285 S B 285		S A 286 S B 286		S A 287 S B 287		S A 288 S B 288		S A 289 S B 289		S A 290 S B 290		S A 291 S B 291		S A 292 S B 292		S A 293 S B 293		S A 294 S B 294		S A 295 S B 295		S A 296 S B 296		S A 297 S B 297		S A 298 S B 298		S A 299 S B 299		S A 300 S B 300		S A 301 S B 301		S A 302 S B 302		S A 303 S B 303		S A 304 S B 304		S A 305 S B 305		S A 306 S B 306		S A 307 S B 307		S A 308 S B 308		S A 309 S B 309		S A 310 S B 310		S A 311 S B 311		S A 312 S B 312		S A 313 S B 313		S A 314 S B 314		S A 315 S B 315		S A 316 S B 316		S A 317 S B 317		S A 318 S B 318		S A 319 S B 319		S A 320 S B 320		S A 321 S B 321		S A 322 S B 322		S A 323 S B 323		S A 324 S B 324		S A 325 S B 325		S A 326 S B 326		S A 327 S B 327		S A 328 S B 328		S A 329 S B 329		S A 330 S B 330		S A 331 S B 331		S A 332 S B 332		S A 333 S B 333		S A 334 S B 334		S A 335 S B 335		S A 336 S B 336		S A 337 S B 337		S A 338 S B 338		S A 339 S B 339		S A 340 S B 340		S A 341 S B 341		S A 342 S B 342		S A 343 S B 343		S A 344 S B 344		S A 345 S B 345		S A 346 S B 346		S A 347 S B 347		S A 348 S B 348		S A 349 S B 349		S A 350 S B 350		S A 351 S B 351		S A 352 S B 352		S A 353 S B 353		S A 354 S B 354		S A 355 S B 355		S A 356 S B 356		S A 357 S B 357		S A 358 S B 358		S A 359 S B 359		S A 360 S B 360		S A 361 S B 361		S A 362 S B 362		S A 363 S B 363		S A 364 S B 364		S A 365 S B 365		S A 366 S B 366		S A 367 S B 367		S A 368 S B 368		S A 369 S B 369		S A 370 S B 370		S A 371 S B 371		S A 372 S B 372		S A 373 S B 373		S A 374 S B 374		S A 375 S B 375		S A 376 S B 376		S A 377 S B 377		S A 378 S B 378		S A 379 S B 379		S A 380 S B 380		S A 381 S B 381		S A 382 S B 382		S A 383 S B 383		S A 384 S B 384		S A 385 S B 385		S A 386 S B 386		S A 387 S B 387		S A 388 S B 388		S A 389 S B 389		S A 390 S B 390		S A 391 S B 391		S A 392 S B 392		S A 393 S B 393		S A 394 S B 394		S A 395 S B 395		S A 396 S B 396		S A 397 S B 397		S A 398 S B 398		S A 399 S B 399		S A 400 S B 400		S A 401 S B 401		S A 402 S B 402		S A 403 S B 403		S A 404 S B 404		S A 405 S B 405		S A 406 S B 406		S A 407 S B 407		S A 408 S B 408		S A 409 S B 409		S A 410 S B 410		S A 411 S B 411		S A 412 S B 412		S A 413 S B 413		S A 414 S B 414		S A 415 S B 415		S A 416 S B 416		S A 417 S B 417		S A 418 S B 418		S A 419 S B 419		S A 420 S B 420		S A 421 S B 421		S A 422 S B 422		S A 423 S B 423		S A 424 S B 424		S A 425 S B 425		S A 426 S B 426		S A 427 S B 427		S A 428 S B 428		S A 429 S B 429		S A 430 S B 430		S A 431 S B 431		S A 432 S B 432		S A 433 S B 433		S A 434 S B 434		S A 435 S B 435		S A 436 S B 436		S A 437 S B 437		S A 438 S B 438		S A 439 S B 439		S A 440 S B 440		S A 441 S B 441		S A 442 S B 442		S A 443 S B 443		S A 444 S B 444		S A 445 S B 445		S A 446 S B 446		S A 447 S B 447		S A 448 S B 448		S A 449 S B 449		S A 450 S B 450		S A 451 S B 451		S A 452 S B 452		S A 453 S B 453		S A 454 S B 454		S A 455 S B 455		S A 456 S B 456		S A 457 S B 457		S A 458 S B 458		S A 459 S B 459		S A 460 S B 460		S A 461 S B 461		S A 462 S B 462		S A 463 S B 463		S A 464 S B 464		S A 465 S B 465		S A 466 S B 466		S A 467 S B 467		S A 468 S B 468		S A 469 S B 469		S A 470 S B 470		S A 471 S B 471		S A 472 S B 472		S A 473 S B 473		S A 474 S B 474		S A 475 S B 475		S A 476 S B 476		S A 477 S B 477		S A 478 S B 478		S A 479 S B 479		S A 480 S B 480		S A 481 S B 481		S A 482 S B 482		S A 483 S B 483		S A 484 S B 484		S A 485 S B 485		S A 486 S B 486		S A 487 S B 487		S A 488 S B 488		S A 489 S B 489		S A 490 S B 490		S A 491 S B 491		S A 492 S B 492		S A 493 S B 493		S A 494 S B 494		S A 495 S B 495		S A 496 S B 496		S A 497 S B 497		S A 498 S B 498		S A 499 S B 499		S A 500 S B 500		S A 501 S B 501		S A 502 S B 502		S A 503 S B 503		S A 504 S B 504		S A 505 S B 505		S A 506 S B 506		S A 507 S B 507		S A 508 S B 508		S A 509 S B 509		S A 510 S B 510		S A 511 S B 511		S A 512 S B 512		S A 513 S B 513		S A 514 S B 514		S A 515 S B 515		S A 516 S B 516		S A 517 S B 517		S A 518 S B 518		S A 519 S B 519		S A 520 S B 520		S A 521 S B 521		S A 522 S B 522		S A 523 S B 523		S A 524 S B 524		S A 525 S B 525		S A 526 S B 526		S A 527 S B 527		S A 528 S B 528		S A 529 S B 529		S A 530 S B 530		S A 531 S B 531		S A 532 S B 532		S A 533 S B 533		S A 534 S B 534		S A 535 S B 535		S A 536 S B 536		S A 537 S B 537		S A 538 S B 538		S A 539 S B 539		S A 540 S B 540		S A 541 S B 541		S A 542 S B 542		S A 543 S B 543		S A 544 S B 544		S A 545 S B 545		S A 546 S B 546		S A 547 S B 547		S A 548 S B 548		S A 549 S B 549		S A 550 S B 550		S A 551 S B 551		S A 552 S B 552		S A 553 S B 553		S A 554 S B 554		S A 555 S B 555		S A 556 S B 556		S A 557 S B 557		S A 558 S B 558		S A 559 S B 559		S A 560 S B 560		S A 561 S B 561		S A 562 S B 562		S A 563 S B 563		S A 564 S B 564		S A 565 S B 565		S A 566 S B 566		S A 567 S B 567		S A 568 S B 568		S A 569 S B 569		S A 570 S B 570		S A 571 S B 571		S A 572 S B 572	
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Stresses in Bar Elements (Page 5 of 8)

FEBRUARY 20, 1996 MSC/NASTRAN 8/24/94 PAGE 3862

KMSAT AMSU-1 DRAGON ENTRY CASES 1-8
DESIGN_GY=-29.6 GR=-19.6

ELEMENT ID.	S T R E S S E S I N		B A R E L E M E N T S		(C B A R)		M.S.-T	
	SA1 SB1	SA2 SB2	SA3 SB3	SA4 SB4	AXIAL STRESS	SA-MAX SB-MIN	SA-MIN SB-MIN	M.S.-C M.S.-C
10005	5.571910E+02 5.547420E+02	6.521365E+02 6.840869E+02	-6.521365E+02 -6.840869E+02	-5.571910E+02 -5.547420E+02	-6.111787E+01	5.909578E+02 6.228881E+02	-7.133153E+02 -7.452457E+02	
10006	5.513726E+02 4.738851E+02	6.999222E+02 5.846788E+02	-6.999222E+02 -5.846788E+02	-5.513726E+02 -4.738851E+02	-6.024681E+01	6.396754E+02 5.244320E+02	-7.601691E+02 -6.49257E+02	
10007	4.837848E+02 3.241700E+02	5.380499E+02 4.131513E+02	-5.380499E+02 -4.131513E+02	-4.837848E+02 -3.241700E+02	-5.484422E+01	4.832057E+02 3.582649E+02	-5.928941E+02 -4.679533E+02	
10008	3.303924E+02 1.922969E+02	3.837829E+02 2.304071E+02	-3.837829E+02 -2.304071E+02	-3.303924E+02 -1.922969E+02	-4.970605E+01	3.340768E+02 1.807011E+02	-4.334889E+02 -2.801132E+02	
10009	1.975213E+02 6.112396E+01	2.057961E+02 6.897050E+01	-2.057961E+02 -6.897050E+01	-1.975213E+02 -6.112396E+01	-4.572225E+01	1.600759E+02 2.324825E+01	-2.55204E+02 -1.146927E+02	
10010	6.343911E+01 -3.812001E+01	5.806164E+01 -6.525035E+01	-5.806164E+01 6.525035E+01	-6.343911E+01 3.812001E+01	-3.935903E+01	2.408008E+01 2.599132E+01	-1.027981E+02 -1.046094E+02	
10011	-3.589667E+01 -1.240437E+02	-7.572778E+01 -1.698408E+02	7.572778E+01 1.698408E+02	3.589667E+01 1.240437E+02	-3.676969E+01	3.895809E+01 1.330711E+02	-1.124975E+02 -2.066105E+02	
10012	-1.216323E+02 -1.845514E+02	-1.812017E+02 -2.515135E+02	1.812017E+02 2.515135E+02	1.216323E+02 1.845514E+02	-3.367996E+01	1.475217E+02 2.178356E+02	-2.148817E+02 -2.851955E+02	
10013	-1.824800E+02 -2.220822E+02	-2.612697E+02 -3.047609E+02	2.612697E+02 3.047609E+02	1.824800E+02 2.220822E+02	-3.164819E+01	2.296215E+02 2.731127E+02	-2.92979E+02 -3.364091E+02	
10014	-2.266074E+02 -2.356447E+02	-3.116214E+02 -3.284088E+02	3.116214E+02 3.284088E+02	2.266074E+02 2.356447E+02	-3.052126E+01	2.811001E+02 2.978875E+02	-3.421426E+02 -3.589300E+02	
10015	-2.349963E+02 -2.200035E+02	-3.314637E+02 -3.254464E+02	3.314637E+02 3.254464E+02	2.349963E+02 2.200035E+02	-3.036483E+01	3.010989E+02 2.950816E+02	-3.618286E+02 -3.558112E+02	
10016	-2.203038E+02 -1.833699E+02	-3.240262E+02 -2.896460E+02	3.240262E+02 2.896460E+02	2.203038E+02 1.833699E+02	-3.339948E+01	2.906267E+02 2.582466E+02	-3.574257E+02 -3.230455E+02	
10017	-1.848301E+02 -1.142585E+02	-2.827701E+02 -2.285983E+02	2.827701E+02 2.285983E+02	1.848301E+02 1.142585E+02	-3.859714E+01	2.441730E+02 1.900011E+02	-3.213673E+02 -2.671954E+02	
10018	-1.170375E+02 -2.550194E+01	-2.155076E+02 -1.327814E+02	2.155076E+02 1.327814E+02	1.170375E+02 2.550194E+01	-4.822362E+01	1.672840E+02 8.455777E+01	-2.637313E+02 -1.810050E+02	
10019	-2.946369E+01 1.164398E+02	-1.141112E+02 -3.172919E+01	1.141112E+02 3.172919E+01	2.946369E+01 -1.164398E+02	-6.557665E+01	4.853459E+01 5.086314E+01	-1.796879E+02 -1.820164E+02	
10020	1.102046E+02 1.842522E+02	-2.350967E+00 1.712277E+02	2.350967E+00 -1.712277E+02	-1.102046E+02 -1.842522E+02	-1.075216E+02	2.682999E+00 7.673059E+01	-2.177262E+02 -2.917738E+02	
10021	1.787431E+02 5.926008E+02	1.971747E+02 1.162254E+02	-1.971747E+02 -1.162254E+02	-1.787431E+02 -5.926008E+02	-1.866779E+02	1.049677E+01 4.059229E+02	-3.838525E+02 -7.792787E+02	
10022	5.814886E+02 1.269785E+02	1.685671E+02 7.981472E+02	-1.685671E+02 -7.981472E+02	-5.814886E+02 -1.269785E+02	-2.168109E+02	3.646777E+02 5.813362E+02	-7.982995E+02 -1.014958E+03	

Stresses in Bar Elements (Page 6 of 8)

METSAT ANNUAL DESIGN STRESS CASES 1-8
DESIGN_CASE=23.6 GR=19.6
FEBRUARY 28, 1996 MSC/NASTRAN 8/25/94 PAGE 3004

SUBCASE 3

ELEMENT ID.	SA1 SB1	STRESSES IN		BAR ELEMENTS		(C B A R)		SA-MIN SB-MIN	M.S.-T M.S.-C
		S32 SB2	SA3 SB3	SA4 SB4	AXIAL STRESS	SA-MAX SB-MAX			
10023	4.645625E+03 -1.632187E+03	2.603647E+03 -1.394202E+03	-2.603647E+03 1.394202E+03	-4.645625E+03 1.632187E+03	-8.589585E+01 1.546291E+03	4.559729E+03 -1.710083E+03	-4.731521E+03 -1.710083E+03		
10024	6.083453E+02 -1.882204E+02	1.656120E+02 1.387765E+02	1.656120E+02 1.387765E+02	-6.083453E+02 1.882204E+02	-5.077699E+02 -3.195495E+02	1.011784E+02 -3.195495E+02	-1.116710E+03 -6.959902E+02		
10025	8.406353E-01 -5.303297E-01	2.268570E+02 3.833258E+01	2.268570E+02 -3.833258E+01	-8.406353E+01 5.303297E+01	-5.205063E+02 -5.385021E+02	-2.936494E+02 -4.674734E+02	-7.473633E+02 -5.735393E+02		
10026	-1.812403E-01 -1.229049E+02	8.101984E+01 8.464434E+01	-8.101984E+01 -8.464434E+01	1.812403E+01 1.229049E+02	-5.385021E+02 -5.734035E+02	-4.574822E+02 -4.155972E+02	-6.195219E+02 -6.614070E+02		
10027	-1.173047E+02 -1.828377E+02	2.661510E+02 1.329335E+02	-2.661510E+02 -1.329335E+02	1.173047E+02 1.828377E+02	-5.734035E+02 -6.123857E+02	-3.072525E+02 -3.905658E+02	-8.395544E+02 -7.562412E+02		
10028	-2.203277E+02 -2.222154E+02	5.869446E+02 1.594070E+02	-3.869446E+02 -1.594070E+02	2.203277E+02 2.222154E+02	-6.123857E+02 -6.512805E+02	-2.254411E+02 -3.901703E+02	-9.993303E+02 -8.346011E+02		
10029	-2.847851E+02 -2.343572E+02	4.424740E+02 1.648705E+02	-4.424740E+02 -1.648705E+02	2.847851E+02 2.343572E+02	-6.512805E+02 -6.962944E+02	-2.088564E+02 -4.169232E+02	-1.093704E+03 -8.856377E+02		
10030	-2.817526E+02 -2.306450E+02	4.595668E+02 1.272773E+02	-4.595668E+02 -1.272773E+02	2.817526E+02 2.306490E+02	-6.962944E+02 -7.505570E+02	-2.367275E+02 -5.357521E+02	-1.155861E+03 -9.269434E+02		
10031	-2.218848E-02 -2.148450E-02	4.118091E+02 2.693062E+01	-4.118091E+02 -2.693062E+01	2.218848E+02 2.143450E+02	-7.505570E+02 -8.268061E+02	-3.387880E+02 -5.357521E+02	-1.162406E+03 -9.654420E+02		
10032	-9.176749E-01 -1.977642E+02	3.054059E+02 -1.650647E+02	-3.054059E+02 1.650647E+02	9.176749E+01 1.977642E+02	-8.268061E+02 -9.335231E+02	-5.214001E+02 -6.230419E+02	-1.132212E+03 -1.024570E+03		
10033	1.152226E+02 -5.476086E+01	1.047478E+02 -3.417558E+02	-1.047478E+02 3.417558E+02	-1.152226E+02 5.476086E+01	-9.335231E+02 -9.335231E+02	-8.183025E+02 -5.917693E+02	-1.048748E+03 -1.275281E+03		
10034	-2.214250E-02 1.743339E+03	-5.101919E+02 5.238328E+02	5.101919E+02 -5.238328E+02	2.214250E+02 -1.743339E+03	-7.148624E+02 -1.028477E+03	1.953295E+02 1.028477E+03	-1.625054E+03 -2.458201E+03		

Stresses in Bar Elements (Page 7 of 8)

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NETSAT AMSUAL DESIGN STRESS CASES 1-8
DESIGN_GY=20.6_G2-19.6

ELEMENT ID.	S T R E S S E S I N		B A R E L E M E N T S		(C B A R)		M.S.-T M.S.-C	
	SA1 SB1	SA2 SB2	SA3 SB3	SA4 SB4	AXIAL STRESS	SA-MAX SB-MAX	SA-MIN SB-MIN	
10005	-1.876278E+04 3.045868E+03	1.004663E+04 -3.718071E+03	-1.004663E+04 3.718071E+03	1.876278E+04 -3.045868E+03	-1.157690E+03	1.760509E+04 2.560382E+03	-1.92047E+04 -4.875761E+03	
10006	3.154269E+03 -1.668323E+03	-4.228796E+03 5.585050E+02	4.228796E+03 5.585050E+02	-3.154269E+03 1.668323E+03	-1.040523E+03	3.188272E+03 6.277999E+02	-5.269319E+03 -2.708847E+03	
10007	-1.727840E+03 -3.976191E+02	-2.781189E+02 7.952695E+02	2.781189E+02 7.952695E+02	1.727840E+03 3.976191E+02	-7.956508E+02	9.321890E+02 -3.813477E-01	-2.523491E+03 -1.590920E+03	
10008	-3.895430E+02 -4.424764E+02	-8.333026E+02 4.261677E+02	8.333026E+02 4.261677E+02	3.895430E+02 4.424764E+02	-7.566679E+02	7.663470E+01 -3.141915E+02	-1.589970E+03 -1.199144E+03	
10009	-4.468171E+02 -2.307603E+02	-4.057284E+02 -2.418204E+02	4.057284E+02 2.418204E+02	4.468171E+02 2.307603E+02	-7.391896E+02	-2.923724E+02 -4.973691E+02	-1.186007E+03 -9.810100E+02	
10010	-2.302724E+02 -1.146153E+02	-2.441125E+02 -5.466148E+01	2.441125E+02 5.466148E+01	2.302724E+02 1.146153E+02	-7.564703E+02	-5.123578E+02 -6.418055E+02	-1.000583E+03 -8.710857E+02	
10011	-1.147297E+02 8.505139E+00	-5.412526E+01 8.581641E+01	5.412526E+01 -8.581641E+01	1.147297E+02 -8.505139E+00	-7.598734E+02	-6.451436E+02 -6.740569E+02	-8.746031E+02 -8.456898E+02	
10012	8.334881E+00 9.334820E+01	8.661919E+01 2.092533E+02	-8.661919E+01 -2.092533E+02	-8.334881E+00 9.334820E+01	-7.684305E+02	-6.818113E+02 -5.591772E+02	-8.550497E+02 -9.776838E+02	
10013	9.343113E+01 1.604791E+02	2.088574E+02 3.005724E+02	-2.088574E+02 -3.005724E+02	-9.343113E+01 1.604791E+02	-7.736160E+02	-5.824758E+02 -4.730436E+02	-9.824734E+02 -1.074188E+03	
10014	1.611883E+02 2.060498E+02	2.972378E+02 3.615573E+02	-2.972378E+02 -3.615573E+02	-1.611883E+02 2.060498E+02	-7.746014E+02	-4.773637E+02 -4.130442E+02	-1.071839E+03 -1.136159E+03	
10015	2.075302E+02 2.186901E+02	3.545813E+02 4.003373E+02	-3.545813E+02 -4.003373E+02	-2.075302E+02 2.186901E+02	-7.698910E+02	-4.153097E+02 -3.635536E+02	-1.124472E+03 -1.170228E+03	
10016	2.210226E+02 2.195748E+02	3.893420E+02 4.028411E+02	-3.893420E+02 -4.028411E+02	-2.210226E+02 2.195748E+02	-7.553727E+02	-3.660307E+02 -3.525316E+02	-1.144715E+03 -1.158214E+03	
10017	2.230679E+02 1.891038E+02	3.863888E+02 3.821330E+02	-3.863888E+02 -3.821330E+02	-2.230679E+02 1.891038E+02	-7.283046E+02	-3.419157E+02 -3.461715E+02	-1.114693E+03 -1.110438E+03	
10018	1.937422E+02 1.432737E+02	3.628362E+02 3.284233E+02	-3.628362E+02 -3.284233E+02	-1.937422E+02 1.432737E+02	-6.796474E+02	-3.133638E+02 -3.512241E+02	-1.039931E+03 -1.008071E+03	
10019	1.494790E+02 9.441369E+01	2.991771E+02 2.321008E+02	-2.991771E+02 -2.321008E+02	-1.494790E+02 9.441369E+01	-5.972280E+02	-2.980508E+02 -3.651272E+02	-8.964051E+02 -8.293287E+02	
10020	1.027313E+02 -3.453588E+01	1.929165E+02 1.481726E+02	-1.929165E+02 -1.481726E+02	-1.027313E+02 3.453588E+01	-4.690456E+02	-2.781290E+02 -3.208730E+02	-6.619621E+02 -6.172181E+02	
10021	-2.320043E+01 4.626828E+01	9.476642E+01 -9.741512E+01	-9.476642E+01 9.741512E+01	2.320043E+01 -4.626828E+01	-2.904743E+02	-1.957079E+02 -1.930591E+02	-3.852407E+02 -3.878894E+02	
10022	4.560945E-01 1.467110E-02	-9.430865E+01 -4.424324E+02	9.430865E+01 4.424324E+02	-4.560945E+01 1.467110E+02	1.186830E+02	2.129916E+02 5.611154E+02	2.437431E+01 -3.237495E+02	

Stresses in Bar Elements (Page 8 of 8)

METSAT AMSU-A1 DESIGN STRESS CASES 1-0
DESIGN_GY--20.6_GZ=19.6

FEIKUAKI 28, 2950 WSC/NAS:INDU 07.07.96 11.00

SUBCASE 4

ELEMENT ID.	SA1 SB1	S T R E S S E S		I N	B A R E L E M E N T S		(C B A R)		SA-MIN SB-MIN	M.S.-T M.S.-C
		SA2 SB2	SA3 SB3		SA4 SB4	AXIAL STRESS	SA-MAX SB-MAX			
10023	2.872619E+04 -1.305596E+04	2.423845E+04 -9.683724E+03	-2.423845E+04 9.683724E+03		-2.872619E+04 1.305596E+04	2.267134E+03	3.093332E+04 -1.532309E+04	-2.645905E+04 -1.078883E+04		
10024	1.112217E+03 -1.675868E+03	8.687908E+02 -7.033930E+01	-8.687908E+02 7.033930E+01		-1.112217E+03 1.675868E+03	-5.547045E+02	4.575127E+02 1.021164E+03	-1.766922E+03 -2.330573E+03		
10025	-9.383975E+02 2.674017E+01	-7.734656E+02 5.442360E+02	7.734656E+02 -5.442360E+02		8.383975E+02 -2.674017E+01	-5.511251E+02	2.872724E+02 -6.889160E+00	-1.389523E+03 -1.095361E+03		
10026	2.038101E-01 1.292309E+02	-2.004123E+02 2.144569E+02	2.004123E+02 -2.144569E+02		-2.038101E+01 1.292309E+02	-4.519854E+02	-2.515731E+02 -2.374885E+02	-6.523977E+02 -6.664823E+02		
10027	3.589978E+02 2.484965E+02	-1.257248E+02 9.742410E+01	1.257248E+02 -9.742410E+01		-3.589978E+02 2.484965E+02	-4.420072E+02	-8.300940E+01 -1.935107E+02	-8.010051E+02 -6.905038E+02		
10028	5.238640E+02 3.403563E-02	-1.900164E+02 4.475133E+01	1.900164E+02 -4.475133E+01		-5.238640E+02 3.403563E+02	-4.422770E+02	8.158698E+01 -1.022207E+02	-9.661409E+02 -7.823333E+02		
10029	5.854573E+02 4.604583E+02	-2.825854E+02 9.802554E+01	2.825854E+02 -9.802554E+01		-5.854573E+02 4.604583E+02	-4.240300E+02	1.614273E+02 3.642825E+01	-1.009487E+03 -8.844883E+02		
10030	6.193232E+02 5.759337E+02	-2.919705E+02 2.057233E+02	2.919705E+02 -2.057233E+02		-6.193232E+02 5.759337E+02	-3.787961E+02	2.405271E+02 1.971376E+02	-9.981193E+02 -9.547299E+02		
10031	5.852012E+02 6.806763E-02	-2.601660E+02 3.848955E+02	2.601660E+02 -3.848955E+02		-5.852012E+02 6.806763E+02	-2.906646E+02	2.945366E+02 3.900117E+02	-8.758657E+02 -9.713408E+02		
10032	4.059810E+02 8.601832E+02	-2.465679E+02 7.342444E+02	2.465679E+02 -7.342444E+02		-4.059810E+02 8.601832E+02	-1.119080E+02	2.940730E+02 7.482753E+02	-5.178890E+02 -9.720922E+02		
10033	7.886724E+01 6.685500E+02	-1.613797E+02 9.073295E+02	1.613797E+02 -9.073295E+02		-7.886724E+01 6.685500E+02	1.993666E+02	3.607464E+02 1.106696E+03	3.798691E+01 -7.079628E+02		
10034	-1.031653E+02 -1.417703E+03	2.505652E+02 -3.846752E+02	-2.505652E+02 3.846752E+02		-1.031653E+02 1.417703E+03	3.791263E+02	6.296915E+02 1.796830E+03	1.285611E+02 -1.038577E+03		

1 Apr 96

5.2 AMSU-A1 METSAT 1331552 SIDEMOUNT MOUNTING BOLT/PIN STRESSES PER STATIC LOADSAerojet METSAT
Coordinate Sys.+X-Axis
+Y-Axis
+Z-AxisGSFC-S-79 PAR
Coordinate Sys.-Y-Axis
-Z-Axis
+X-Axis

Eight combinations of design loads are evaluated. Referencing Appendix E, Section 1.2, PAR individual loads, Load Cases 1 through 8 in the Aerojet METSAT Coordinate System are:

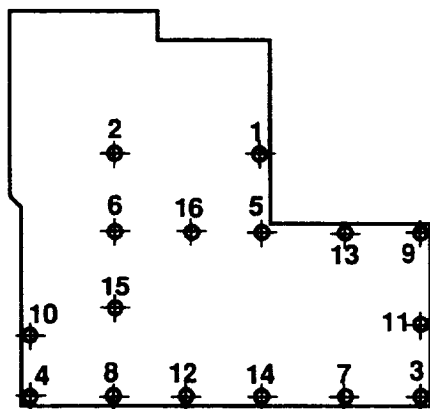
Load Case	Loading
1	Gy=-20.6, Gx=-21.2
2	Gy=-20.6, Gx= 21.2
3	Gy=-20.6, Gz=-19.6
4	Gy=-20.6, Gz=-19.6
5	Gy= 20.6, Gx=-21.2
6	Gy= 20.6, Gx= 21.2
7	Gy= 20.6, Gz=-19.6
8	Gy= 20.6, Gz= 19.6

With the exception of algebraic sign, load Cases 1, 2, 3, and 4 are identical to Load Cases 6, 5, 8, and 7, respectively. Thus only Cases 1 through 4 are evaluated.

FACTOR OF SAFETY 1.4 ULTIMATE

ASSUMPTIONS

- 1) Stresses in bolts derived from NASTRAN SPC forces per above load cases plus bolt preload (50 in-lb per 1333964).
- 2) There are 16 bolts plus 2 dowel pins per the NASTRAN sketch. A list of NASTRAN grid numbers is included. Grids 7855 and 10724 are the shear pins.
- 3) Bolt grids react tension/compression (NASTRAN T2) plus shear (NASTRAN T1, T3).



Torque Sequence: 29

Torque screws to 20 ± 2 in lbs in the order shown
 Torque screws to 30 ± 2 in lbs in the order shown
 Torque screws to 40 ± 2 in lbs in the order shown
 Torque screws to 50 ± 2 in lbs in the order shown

396-3116M

- 4) Pin grids react only shear (NASTRAN T1, T3).
- 5) Interactive tension plus shear considered per MIL-HDBK-5E Figure 1.5.3.5 $R_s^3 + R_s^2 = 1$ curve.
- 6) Allowables for A286 screws and pins based on $F_{TU} = 140000$ psi, tensile area for #10-32 THDS (tensile area .01999 in²). Shear load allowable based on $F_{SU} = .6 F_{TU}$ and area per minor $\phi \pi/4$ (.1384)² = .01515 in².

Allowable

Tension	2800 lb	#10-32
Shear	1273 lb	

- 7) The factor of safety, 1.4, is applied only to applied loads, not to preload.
- 8) Preload at 50 in-lb torque, F_i

$$F_i = \frac{T}{.2d} = \frac{50}{(.2)(.190)} = 1315 \text{ lb}$$

Bolt loads per the 8 load cases (NASTRAN) follow.

Detailed calculations are performed for the most severe case, Grid 9576, Case 4
 $G_y = -20.6$, $G_z = 19.6$

$$F_t = T_2 = 781.1 \text{ lb}$$

$$F_s = \sqrt{T_1^2 + T_3^2} = \sqrt{230.8^2 + (-159.1)^2} = 280.3 \text{ lb}$$

$$F_i = 1315 \text{ lb}$$

Total bolt tensile load, F_b , is a function of preload, applied tension, and joint stiffness.

$$F_b = F_i + \frac{k_b F_t}{k_b + k_m} \quad (\text{Shigley, "Mechanical Engineering Design," 4th Ed.})$$

$$k_b = \frac{E_b A}{\ell}$$

$E_b = 28 \times 10^6 \text{ psi}$
 $A = \pi / 4 (.190)^2 = .02835 \text{ in}^2$
 $\ell = \text{Grip of screw}$
 $.437 + .31 + .06 = .807 \text{ in}$

$$= 983743 \text{ lb/in}$$

$$k_m = \frac{\pi E_m d}{2 L_n \frac{5(\ell + d/2)}{(\ell + 2.5d)}} \quad \text{For G-10 spacer only w/fibers } \perp \text{ thickness use epoxy only prop}$$

$E_m = 250000 \text{ psi}$
 $\ell = .807 \text{ in}$
 $d = .190 \text{ in}$

$$= 59316 \text{ lb/in w/low } E_m$$

Conservatively assume $k_m \ll k_b$, thus

$$\frac{k_b}{k_b + k_m} \rightarrow 1.0$$

Apply the applied load directly to the preload for GRID 9576, Case 4, applying FS=1.4

$$f_t = 1315 + 1.4 (781.1) = 2409 \text{ lb}$$

$$f_s = 1.4 (280.3) = 392 \text{ lb}$$

$$r_t = \frac{f_t}{F_{TU}} = \frac{2409}{2800} = .860$$

$$r_s = \frac{f_s}{F_{SU}} = \frac{392}{1273} = .308$$

Per Figure 1.5.3.5 MIL-HDBK-5E $R_t^2 + R_s^2 = 1$ curve for combined tension and shear.

$$R_t = .977$$

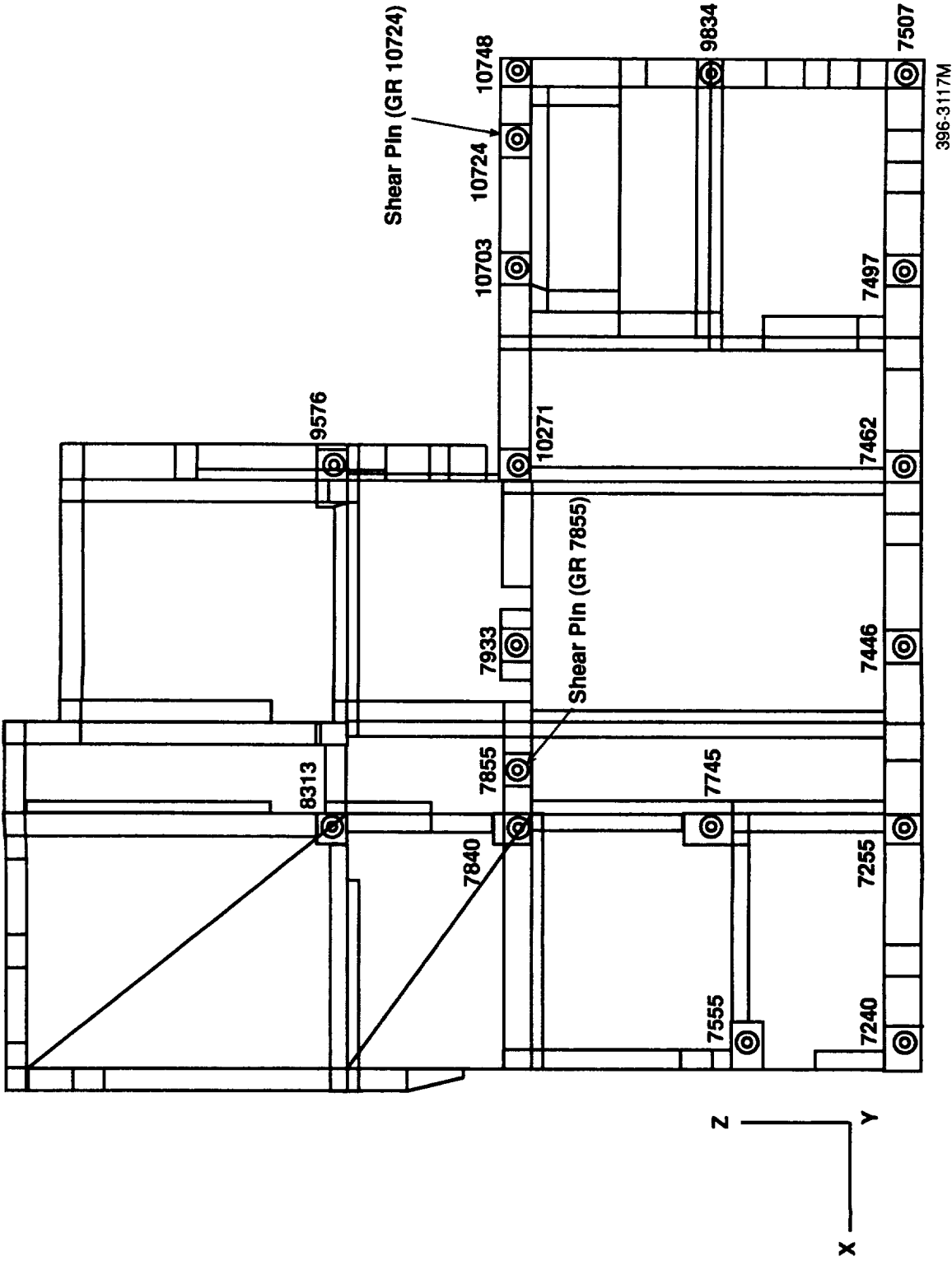
$$R_s = .350$$

$$U = \frac{r_t}{R_t} = \frac{r_s}{R_s} = .880$$

$$MS = \frac{1}{U} - 1 = +.14$$

Combined tension + shear GRID 9576 Case 4 ultimate

The summary table contains MS values for the higher loaded bolts.



METSAT AMSU-A1 1331552-1 Sidemount Mounting Bolt Grids

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 1 of 8)

FEBRUARY 28, 1996 MSC/NASTRAN 8/24/94 PAGE 1015
SUBCASE 1

METSAT AMSUAL DESIGN STRESS CASES 1-8
DESIGN_GY--20.6_GX--21.2

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	-2.008595E+01	-2.45891E+02	-2.005966E+02	0.0	0.0	0.0
7255	G	1.724126E+02	-1.203024E+02	-8.593026E+01	0.0	0.0	0.0
7446	G	6.087409E+01	-1.797652E+00	-1.484591E+01	0.0	0.0	0.0
7462	G	2.712976E+01	1.398378E+02	6.918264E+01	0.0	0.0	0.0
7497	G	7.209891E+01	4.423756E+01	2.879941E+01	0.0	0.0	0.0
7507	G	1.250493E+02	2.594306E+02	1.032568E+02	0.0	0.0	0.0
7555	G	3.517656E+01	-8.616155E+00	-4.282572E+01	0.0	0.0	0.0
7745	G	4.302109E+01	7.958356E+01	-5.863008E+01	0.0	0.0	0.0
7840	G	1.392038E+02	1.834220E+02	4.663076E+01	0.0	0.0	0.0
7855	G	3.055760E+02	0.0	2.522351E+01	0.0	0.0	0.0
7933	G	8.944797E+01	1.045098E+02	-2.238535E+01	0.0	0.0	0.0
8313	G	3.980384E+02	1.400195E+02	1.572288E+02	0.0	0.0	0.0
9576	G	2.904940E+02	3.881367E+02	-6.824769E+01	0.0	0.0	0.0
9834	G	4.799084E+02	4.396203E+02	3.455210E+01	0.0	0.0	0.0
10271	G	5.984922E+01	6.027330E+02	2.377915E+02	0.0	0.0	0.0
10703	G	2.060374E+02	3.029883E+02	-1.127367E+02	0.0	-3.067697E-20	0.0
10724	G	5.481094E+00	0.0	7.483765E+00	0.0	-7.097038E-20	0.0
10748	G	3.788639E+01	6.818316E+01	-1.039510E+02	0.0	1.973762E-20	0.0

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 2 of 8)

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PAGE

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FEBRUARY 28, 1996

1-8

DESIGN

GY--20.6

GX=21.2

SUBCASE 2

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	1.852083E+01	4.455622E+02	2.841721E+02	0.0	0.0	0.0
7255	G	-2.449753E+02	1.044868E+02	-5.892222E+01	0.0	0.0	0.0
7446	G	-2.193719E+02	-1.775910E+00	-4.248576E+00	0.0	0.0	0.0
7462	G	-1.758241E+02	-1.835136E+02	-2.132584E+02	0.0	0.0	0.0
7497	G	-1.802049E+02	-5.139875E+01	-5.664494E+01	0.0	0.0	0.0
7507	G	-1.885360E+02	-3.669243E+02	-1.233099E+02	0.0	0.0	0.0
7555	G	-1.902176E+01	6.581477E+02	5.746579E+01	0.0	0.0	0.0
7745	G	-7.397985E+01	2.793691E+02	-1.171336E+02	0.0	0.0	0.0
7840	G	-1.432144E+01	6.308396E+02	2.586615E+02	0.0	0.0	0.0
7855	G	-5.66067E+01	0.0	1.276220E+02	0.0	0.0	0.0
7933	G	-3.329786E+01	1.608593E+02	-1.407194E+01	0.0	0.0	0.0
8313	G	-2.660893E+02	3.037776E+02	1.199503E+02	0.0	0.0	0.0
9576	G	-1.493425E+02	2.700679E+02	3.848626E+00	0.0	0.0	0.0
9834	G	-4.413876E+02	-2.477092E+02	2.820278E+01	0.0	0.0	0.0
10271	G	-2.541473E+02	2.794361E+02	-1.275233E+02	0.0	0.0	0.0
10703	G	-1.089695E+02	6.603479E+01	-7.177581E+01	0.0	7.954608E-21	0.0
10724	G	-1.097198E+02	0.0	-2.417551E+01	0.0	9.741956E-20	0.0
10748	G	-1.032989E+01	1.088394E+02	-2.879905E+01	0.0	1.323701E-20	0.0

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 3 of 8)

MEISAT ANNUAL DESIGN STRESS CASES 1-8
DESIGN GZ--20.6 GZ--19.6
FEBRUARY 28, 1990 1000/1000000
SUBCASE 3

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	1.560373E+02	4.414279E+02	3.230015E+02	0.0	0.0	0.0
7255	G	-1.797271E+02	3.864438E+02	1.434639E+02	0.0	0.0	0.0
7446	G	6.026353E+00	5.763888E+01	8.498628E+01	0.0	0.0	0.0
7462	G	-1.626416E+02	5.093228E+02	2.868733E+02	0.0	0.0	0.0
7497	G	2.199795E+00	9.454171E+01	7.570384E+01	0.0	0.0	0.0
7507	G	1.140260E+02	3.253695E+02	1.569584E+02	0.0	0.0	0.0
7555	G	1.281337E+01	2.355496E+02	5.324390E+01	0.0	0.0	0.0
7745	G	-3.521836E+01	1.749208E+02	1.056490E+02	0.0	0.0	0.0
7840	G	3.339361E+01	9.284003E+01	2.618665E+02	0.0	0.0	0.0
7855	G	1.046171E+02	0.0	2.413120E+02	0.0	0.0	0.0
7933	G	-2.485886E+01	2.551333E+01	9.427215E+00	0.0	0.0	0.0
8313	G	-4.188125E+01	-1.521620E+01	8.141984E+01	0.0	0.0	0.0
9576	G	-8.973584E+01	-1.228794E+02	9.473044E+01	0.0	0.0	0.0
9834	G	1.422410E+02	1.828764E+02	1.634343E+01	0.0	0.0	0.0
10271	G	-2.804681E+01	1.874147E+02	2.238786E+02	0.0	0.0	0.0
10703	G	-8.532315E+00	-1.187890E+01	4.969968E+01	0.0	-7.049568E-21	0.0
10724	G	2.779830E+01	0.0	2.777169E+00	0.0	-5.054091E-20	0.0
10748	G	-2.851065E+01	-1.078218E+02	8.540172E+01	0.0	-1.381373E-20	0.0

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 4 of 8)

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METSAT AMSUAL DESIGN STRESS CASES 1-8

DESIGN_GY--20.6_GZ-19.6

SUBCASE 4

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	-1.576024E+02	-2.417608E+02	-2.394260E+02	0.0	0.0	0.0
7255	G	1.071644E+02	-4.022598E+02	-3.283163E+02	0.0	0.0	0.0
7446	G	-1.645241E+02	-6.121244E+01	-1.040808E+02	0.0	0.0	0.0
7462	G	1.394724E+01	-5.529985E+02	-4.309490E+02	0.0	0.0	0.0
7497	G	-1.103058E+02	-1.017029E+02	-1.035494E+02	0.0	0.0	0.0
7507	G	-1.775127E+02	-4.328631E+02	-1.770114E+02	0.0	0.0	0.0
7535	G	3.341429E+00	4.139819E+02	-7.860383E+01	0.0	0.0	0.0
7745	G	4.259595E+00	1.840319E+02	-2.814726E+02	0.0	0.0	0.0
7840	G	9.148870E+01	7.213915E+02	4.332581E+01	0.0	0.0	0.0
7855	G	1.443582E+02	0.0	-8.846648E+01	0.0	0.0	0.0
7933	G	8.100897E+01	2.398518E+02	-4.588451E+01	0.0	0.0	0.0
8313	G	1.738304E+02	4.590133E+02	1.957593E+02	0.0	0.0	0.0
9576	G	2.308873E+02	7.810540E+02	-1.591295E+02	0.0	0.0	0.0
9834	G	-1.037202E+02	9.034744E+00	4.641146E+01	0.0	0.0	0.0
10271	G	-1.662513E+02	6.947545E+02	-1.136104E+02	0.0	0.0	0.0
10703	G	1.056003E+02	4.609019E+02	-2.342122E+02	0.0	-1.567279E-20	0.0
10774	G	-1.320370E+02	0.0	-1.946892E+01	0.0	7.699008E-20	0.0
10748	G	5.606716E+01	2.848444E+02	-2.181518E+02	0.0	4.678836E-20	0.0

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 5 of 8)

METSAT AMSUA1 DESIGN STRESS CASES 1-8
DESIGN_GY=20.6_GX=-21.2
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SUBCASE 5

POINT ID.	TYPE	FORCES OF SINGLE-POINT CONSTRAINT									
		T1	T2	T3	R1	R2	R3				
7240	G	-1.852083E+01	-4.455562E+02	-2.841721E+02	0.0	0.0	0.0				
7255	G	2.449753E+02	-1.044868E+02	9.892222E+01	0.0	0.0	0.0				
7446	G	2.193719E+02	1.775910E+00	4.248576E+00	0.0	0.0	0.0				
7462	G	1.758241E+02	1.835136E+02	2.132584E+02	0.0	0.0	0.0				
7497	G	1.802049E+02	5.139875E+01	5.664494E+01	0.0	0.0	0.0				
7507	G	1.885360E+02	3.669243E+02	1.233099E+02	0.0	0.0	0.0				
7555	G	1.902176E+01	-6.581477E+02	-5.746579E+01	0.0	0.0	0.0				
7745	G	7.397985E+01	-2.793691E+02	1.171936E+02	0.0	0.0	0.0				
7840	G	1.432144E+01	-6.308096E+02	-2.586615E+02	0.0	0.0	0.0				
7855	G	5.660067E+01	0.0	-1.276220E+02	0.0	0.0	0.0				
7933	G	3.329786E+01	-1.608593E+02	1.407194E+01	0.0	0.0	0.0				
8313	G	2.660893E+02	-3.037776E+02	-1.199503E+02	0.0	0.0	0.0				
9576	G	1.493425E+02	-2.700679E+02	-3.848626E+00	0.0	0.0	0.0				
9834	G	4.413876E+02	2.477022E+02	-2.820278E+01	0.0	0.0	0.0				
10711	G	2.541473E+02	-2.794361E+02	1.275233E+02	0.0	0.0	0.0				
10703	G	1.089695E+02	-6.603479E+01	7.177581E+01	0.0	-7.954608E-21	0.0				
10724	G	1.097198E+02	0.0	2.417551E+01	0.0	-9.741956E-20	0.0				
10748	G	1.032989E+01	-1.088394E+02	2.879905E+01	0.0	-1.323701E-20	0.0				

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 6 of 8)

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SUBCASE 6

METSAT AMSUAL DESIGN STRESS CASES 1-8
DESIGN_GY-20.6_CX-21.2

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	2.008595E+01	2.458891E+02	2.005966E+02	0.0	0.0	0.0
7255	G	-1.724126E+02	1.203024E+02	8.593026E+01	0.0	0.0	0.0
7446	G	-6.087409E+01	1.797652E+00	1.484591E+01	0.0	0.0	0.0
7462	G	-2.712976E+01	-1.398378E+02	-6.918264E+01	0.0	0.0	0.0
7497	G	-7.209891E+01	-4.423756E+01	-2.879941E+01	0.0	0.0	0.0
7507	G	-1.250493E+02	-2.594308E+02	-1.032568E+02	0.0	0.0	0.0
7555	G	-3.517656E+01	8.616155E+00	4.282572E+01	0.0	0.0	0.0
7745	G	-4.302109E+01	-7.958358E+01	5.863008E+01	0.0	0.0	0.0
7840	G	-1.392038E+02	-1.834220E+02	-4.663076E+01	0.0	0.0	0.0
7855	G	-3.055760E+02	0.0	-2.522351E+01	0.0	0.0	0.0
7933	G	-8.944797E+01	-1.045058E+02	2.238535E+01	0.0	0.0	0.0
8313	G	-3.980384E+02	-1.400195E+02	-1.572288E+02	0.0	0.0	0.0
9576	G	-2.904940E+02	-3.881067E+02	6.824769E+01	0.0	0.0	0.0
9834	G	-4.799084E+02	-4.396203E+02	-3.455210E+01	0.0	0.0	0.0
10271	G	-5.984922E+01	-6.027330E+02	-2.377915E+02	0.0	0.0	0.0
10703	G	-2.060374E+02	-3.829883E+02	1.127367E+02	0.0	3.067697E-20	0.0
10724	G	-5.481094E+00	0.0	-7.483765E+00	0.0	7.097038E-20	0.0
10748	G	-3.788639E+01	-6.818316E+01	1.039510E+02	0.0	-1.973762E-20	0.0

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 7 of 8)

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SUBCASE 7

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METSAT AMSU-A1 DESIGN STRESS CASES 1-8
DESIGN_GY-20.6_GZ--19.6

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	1.576024E+02	2.417608E+02	2.394260E+02	0.0	0.0	0.0
7255	G	-1.071644E+02	4.022594E+02	3.283163E+02	0.0	0.0	0.0
7446	G	1.645241E+02	6.121244E+01	1.040808E+02	0.0	0.0	0.0
7462	G	-1.394724E+01	5.529985E+02	4.309490E+02	0.0	0.0	0.0
7497	G	1.103058E+02	1.017029E+02	1.035494E+02	0.0	0.0	0.0
7507	G	1.775127E+02	4.328631E+02	1.770114E+02	0.0	0.0	0.0
7555	G	-3.341429E+00	-4.139819E+02	7.860383E+01	0.0	0.0	0.0
7745	G	-4.259595E+00	-1.840319E+02	2.814726E+02	0.0	0.0	0.0
7840	G	-9.148870E+01	-7.213916E+02	-4.332581E+01	0.0	0.0	0.0
7855	G	-1.443582E+02	0.0	8.846648E+01	0.0	0.0	0.0
7933	G	-8.100897E+01	-2.398518E+02	4.588451E+01	0.0	0.0	0.0
8313	G	-1.738304E+02	-4.590133E+02	-1.957593E+02	0.0	0.0	0.0
9576	G	-2.308873E+02	-7.810540E+02	1.591295E+02	0.0	0.0	0.0
9834	G	1.037202E+02	-9.034744E+00	-4.641146E+01	0.0	0.0	0.0
10271	G	1.662513E+02	-6.947545E+02	1.136104E+02	0.0	0.0	0.0
10703	G	-1.056003E+02	-4.609019E+02	2.342122E+02	0.0	1.567279E-20	0.0
10724	G	1.320370E+02	0.0	1.946892E+01	0.0	-7.699008E-20	0.0
10748	G	-3.606716E+01	-2.848444E+02	2.181518E+02	0.0	-4.678836E-20	0.0

FORCES OF SINGLE-POINT CONSTRAINT (Sheet 8 of 8)

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SUBCASE 8

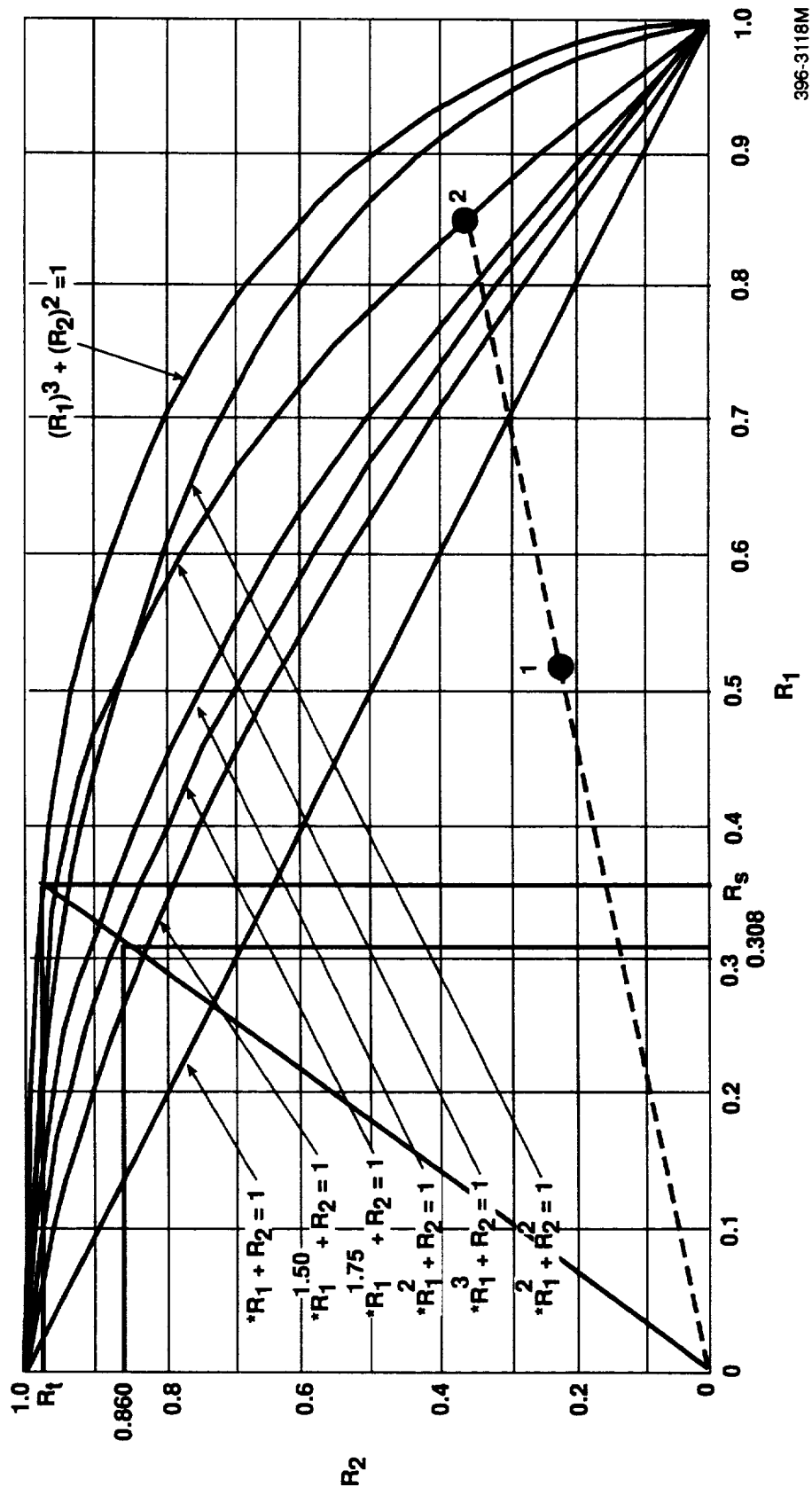
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METSAT AMSUAL DESIGN STRESS CASES 1-8
DESIGN_GY-20.6_GZ-19.6

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	-1.560373E+02	-4.414279E+02	-5.230015E+02	0.0	0.0	0.0
7255	G	1.797271E+02	-3.864338E+02	-1.434639E+02	0.0	0.0	0.0
7446	G	-6.026353E+00	-5.763888E+01	-8.498628E+01	0.0	0.0	0.0
7462	G	1.626416E+02	-5.093228E+02	-2.868733E+02	0.0	0.0	0.0
7497	G	-2.199795E+00	-9.454171E+01	-7.570384E+01	0.0	0.0	0.0
7507	G	-1.140260E+02	-3.253695E+02	-1.569584E+02	0.0	0.0	0.0
7555	G	-1.281337E+01	-2.355436E+02	-9.324330E+01	0.0	0.0	0.0
7745	G	3.521836E+01	-1.749208E+02	-1.056490E+02	0.0	0.0	0.0
7840	G	-3.339361E+01	-9.284003E+01	-2.619655E+02	0.0	0.0	0.0
7855	G	-1.046171E+02	0.0	-2.413120E+02	0.0	0.0	0.0
7933	G	2.485866E+01	-2.551333E+01	-9.427215E+00	0.0	0.0	0.0
8313	G	4.188125E+01	1.521620E+01	-8.141984E+01	0.0	0.0	0.0
9576	G	8.973584E+01	1.228794E+02	-9.473044E+01	0.0	0.0	0.0
9834	G	-1.422410E+02	-1.828764E+02	-1.634343E+01	0.0	0.0	0.0
10271	G	2.804681E+01	-1.874147E+02	-2.238788E+02	0.0	0.0	0.0
10703	G	8.532315E+00	1.187890E+01	-4.969969E+01	0.0	7.049568E-21	0.0
10724	G	-2.779830E+01	0.0	-2.777169E+00	0.0	5.054091E-20	0.0
10748	G	2.851065E+01	1.078218E+02	-8.540172E+01	0.0	1.381373E-20	0.0

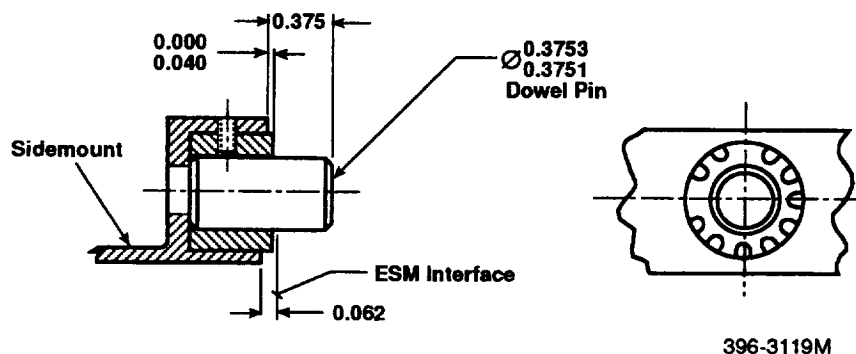
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1 June 1987



Typical Interaction Curves For Combined Loading Conditions

Shear Pins Shear Tearout

Per 1333964 SH2 View D and the 1331552-1 sidemount with the 1333395-2 and -3 spacers.



Shear tearout of the sidemount and bearing on the sidemount can be determined. The 1333395-2 and -3 T1-6AL-4V spacers are scalloped along the OD, thus reducing the bearing area to the 6061-T6 sidemount.

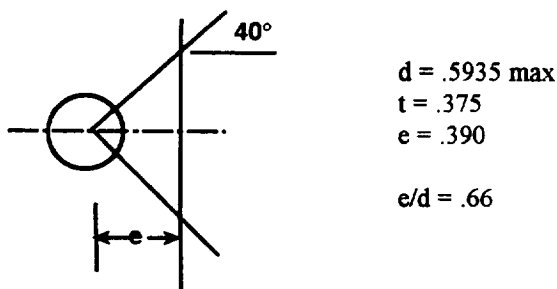
Shear Tearout of Aluminum Sidemount

Per Case 4 GRID 7855 pin, from the NASTRAN solution with all shear reacted at the 2 shear pins (no SPC restraint in T1 or T3 for the 16 screws).

Max shear load

$$F = \sqrt{(152)^2 + (-1910)^2} = 1916 \text{ lb}$$

Shear tearout of the aluminum sidemount for dimensions as noted, per Bruhn, "Analysis and Design of Airplane Structures," 1973, pages D.1.4-D.1.5.



$$AS = (e - \frac{d}{2} \cos 40) (t) (2) = .122 \text{ in}^2$$

Per ultimate load, with FS = 1.4

$$T = \frac{1.4 (1916)}{.122} = 21986 \text{ psi}$$

Shear allowable for sidemount, 6061-T6

$$F_{su} = 27000 \text{ psi}$$

$$MS = \frac{27000}{21986} - 1 = +.23 \text{ sidemount}$$

Bearing of 1333395-2 Bushing Onto Sidemount

With F=1916 lb load

Bearing area w/o considering scallops in 1333395-2 bushing

$$A = (.375-.010-.035) (.5936) = .196 \text{ in}^2$$

Scallops considered for 40% of circumference

$$\pi d = \pi (.5936) = 1.865$$

$$\text{Remove } 12 \times .062 = .744$$

$$(.744/1.865) \times 100 = 40\%$$

Bearing area w/scallops

$$A = (.60) (.196) = .118 \text{ in}^2$$

With 1.25 FS for limit load

$$\sigma = \frac{1.25 \times 1916}{.118} = 20300 \text{ psi Limit w / 1.25 FS}$$

With $e/D = .66 \ll 1.5$ use $F_{by} = F_{cy}$

$$F_{cy} = 35000 \text{ psi}$$

$$MS = \frac{35000}{20300} - 1 = +.72 \text{ Sidemount w / 1.25 FS limit}$$

With 1.4 FS for ultimate load

$$\sigma = \frac{1.4 \times 1916}{.118} = 22740 \text{ psi}$$

With $e/D = .66 \ll 1.5$ Use $F_{bu} = F_{tu} = 42000 \text{ psi}$

$$MS = \frac{42000}{22740} - 1 = +.84 \text{ Sidemount w / 1.4 FS ultimate}$$

The NASTRAN loads are given for load cases 1-4 for the condition of all shear reacted in pins. The other load cases are summarized in the summary table.

Mounting Bolt Stresses per Static Loads for Condition of All Shear Reacted at Pins

Summary tables for 8 design load cases contain all data. Worst location is bolt at GRID 7840 for load case 2 (per assumption of $k_b/k_b+k_m = 1.0$) and FS of 1.4 applied to applied load minimum margin

$$MS = \frac{2800}{(1.4)(863) + 1315} - 1 = +0.11$$

Forces of Single-Point Constraint (Sheet 1 of 4)

MTEAT AMSU-A1 DESIGN STRESS CASES 1-4 ALL SHEAR AT PINS
DESIGN_GY--20.6_GX--21.2
MARCH 6, 1996 MSC/NASTRAN 8/24/94 PAGE 1242

SUBCASE 1

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	0.0	-1.178089E+02	0.0	0.0	0.0	0.0
7255	G	0.0	-8.269273E+01	0.0	0.0	0.0	0.0
7446	G	0.0	-8.708737E-01	0.0	0.0	0.0	0.0
7462	G	0.0	1.688643E+02	0.0	0.0	0.0	0.0
7497	G	0.0	5.298440E+01	0.0	0.0	0.0	0.0
7507	G	0.0	2.194055E+02	0.0	0.0	0.0	0.0
7555	G	0.0	-1.124066E+02	0.0	0.0	0.0	0.0
7745	G	0.0	1.654805E+01	0.0	0.0	0.0	0.0
7840	G	0.0	5.428014E+01	0.0	0.0	0.0	0.0
7855	G	1.771088E+03	0.0	4.454264E+01	0.0	0.0	0.0
7933	G	0.0	9.128440E-01	0.0	0.0	0.0	0.0
8313	G	0.0	1.257156E+02	0.0	0.0	0.0	0.0
9576	G	0.0	3.318813E-02	0.0	0.0	0.0	0.0
9834	G	0.0	2.800045E+02	0.0	0.0	0.0	0.0
10271	G	0.0	8.202147E+02	0.0	0.0	0.0	0.0
10703	G	0.0	4.656355E+02	0.0	0.0	-4.268205E-20	0.0
10724	G	7.565107E+02	0.0	-4.454265E+01	0.0	-1.491255E-19	0.0
10748	G	0.0	9.985372E+01	0.0	0.0	3.644374E-20	0.0

Forces of Single-Point Constraint (Sheet 2 of 4)

METSAT AMSU-A1 DESIGN STRESS CASES 1-4 ALL SHEAR AT PINE
DESIGN GY--20.6 GX=21.2
MARCH 6, 1996 MSC/NASIRAN 0/23/94 FINE 1400
SUBCASE 2

FORCES OF SINGLE-POINT CONSTRAINT

POINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	0.0	2.091517E+02	0.0	0.0	0.0	0.0
7255	G	0.0	5.810716E+01	0.0	0.0	0.0	0.0
7446	G	0.0	-7.25496E+00	0.0	0.0	0.0	0.0
7462	G	0.0	-1.566814E+02	0.0	0.0	0.0	0.0
7497	G	0.0	-4.426785E+01	0.0	0.0	0.0	0.0
7507	G	0.0	-2.398954E+02	0.0	0.0	0.0	0.0
7555	G	0.0	8.167283E+02	0.0	0.0	0.0	0.0
7745	G	0.0	2.732163E+02	0.0	0.0	0.0	0.0
7840	G	0.0	8.629764E+02	0.0	0.0	0.0	0.0
7855	G	-1.614564E+03	0.0	-4.454266E+01	0.0	0.0	0.0
7933	G	0.0	1.051451E+02	0.0	0.0	0.0	0.0
8313	G	0.0	3.97784E+02	0.0	0.0	0.0	0.0
9576	G	0.0	2.867170E+02	0.0	0.0	0.0	0.0
9834	G	0.0	-4.665310E+01	0.0	0.0	0.0	0.0
10271	G	0.0	1.262729E+02	0.0	0.0	0.0	0.0
10703	G	0.0	-1.950423E+02	0.0	0.0	1.325375E-20	0.0
10724	G	-9.130353E+02	0.0	4.454266E+01	0.0	1.025133E-19	0.0
10748	G	0.0	1.776473E+01	0.0	0.0	-4.413177E-21	0.0

Forces of Single-Point Constraint (Sheet 3 of 4)

8/24/94 PAGE 1268
SUBCASE 3

MARCH 6, 1996 MSC/NASTRAN

WETST AMSU-A1 DESIGN STRESS CASES 1-4 ALL SHEAR AT PINS
DESIGN_GY--20.6_GZ--19.6

FORCES OF SINGLE-POINT CONSTRAINT

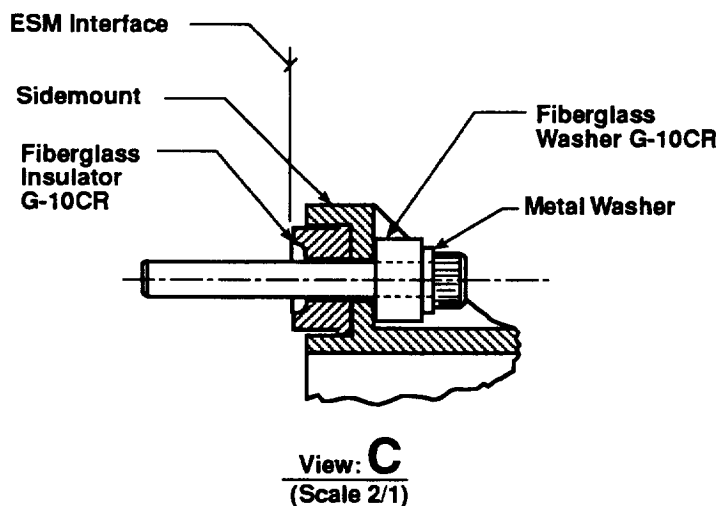
PCINT ID.	TYPE	T1	T2	T3	R1	R2	R3
7240	G	0.0	2.861164E+02	0.0	0.0	0.0	0.0
7255	G	0.0	4.237552E+02	0.0	0.0	0.0	0.0
7446	G	0.0	5.375281E+01	0.0	0.0	0.0	0.0
7462	G	0.0	4.934838E+02	0.0	0.0	0.0	0.0
7497	G	0.0	1.005227E+02	0.0	0.0	0.0	0.0
7507	G	0.0	3.168228E+02	0.0	0.0	0.0	0.0
7555	G	0.0	3.222010E+02	0.0	0.0	0.0	0.0
7745	G	0.0	2.723097E+02	0.0	0.0	0.0	0.0
7840	G	0.0	6.097578E+01	0.0	0.0	0.0	0.0
7855	G	4.075118E+00	0.0	1.910095E+03	0.0	0.0	0.0
7933	G	0.0	5.022702E+01	0.0	0.0	0.0	0.0
8313	G	0.0	-7.954902E+01	0.0	0.0	0.0	0.0
9576	G	0.0	-6.781347E+01	0.0	0.0	0.0	0.0
9834	G	0.0	2.442623E+02	0.0	0.0	0.0	0.0
10271	G	0.0	2.739455E+02	0.0	0.0	0.0	0.0
10703	G	0.0	-1.535345E+02	0.0	0.0	-7.121309E-21	0.0
10724	G	-4.075118E+00	0.0	4.267421E+02	0.0	-3.688422E-19	0.0
10748	G	0.0	-1.464150E+02	0.0	0.0	-1.001068E-20	0.0

Forces of Single-Point Constraint (Sheet 4 of 4)

METEAT AM8U-A1 DESIGN STRESS CASES 1-4 ALL SHEAR AT PINS									
DESIGN_GY=-20.6 GZ=29.6									
MARCH 07 13:30 EDDC/ANGLING									
SUBCASE 4									
FORCES OF SINGLE-POINT CONSTRAINT									
POINT ID.	TYPE	T1	T2	T3	R1	R2	R3		
7240	G	0.0	-1.347736E+02	0.0	0.0	0.0	0.0		
7255	G	0.0	-4.163407E+02	0.0	0.0	0.0	0.0		
7446	G	0.0	-6.667865E+01	0.0	0.0	0.0	0.0		
7462	G	0.0	-4.913308E+02	0.0	0.0	0.0	0.0		
7497	G	0.0	-9.180620E+01	0.0	0.0	0.0	0.0		
7507	G	0.0	-3.373126E+02	0.0	0.0	0.0	0.0		
7555	G	0.0	3.821206E+02	0.0	0.0	0.0	0.0		
7745	G	0.0	1.745471E+01	0.0	0.0	0.0	0.0		
7840	G	0.0	8.562308E+02	0.0	0.0	0.0	0.0		
7855	G	1.524494E+02	0.0	-1.910095E+03	0.0	0.0	0.0		
7933	G	0.0	1.462025E+02	0.0	0.0	0.0	0.0		
8313	G	0.0	6.070430E+02	0.0	0.0	0.0	0.0		
9576	G	0.0	7.356118E+02	0.0	0.0	0.0	0.0		
9834	G	0.0	-1.091094E+01	0.0	0.0	0.0	0.0		
10271	G	0.0	6.645421E+02	0.0	0.0	-2.230500E-20	0.0		
10703	G	0.0	4.240377E+02	0.0	0.0	3.222320E-19	0.0		
10724	G	-1.524494E+02	0.0	-4.267421E+02	0.0	4.204125E-20	0.0		
10748	G	0.0	2.640334E+02	0.0	0.0				

Member Compression Under Preload

The mounting bolt joint is shown from a view on 1333964.



396-3121M

Where the metal CRES washer is considered as .440 OD, .195 ID, .060 thick. The fiberglass washer is G-10, .435 $\varnothing$ x .250 thick. The fiberglass insulator is also 6-10, .590 $\varnothing$ x .310 thick (1333395-6).

The sidemount hole dimensions are a .287 max dia hole w/.5925 max dia counterbore. Thickness of .287 $\varnothing$ is .125.

Maximum load is the preload $F_i = 1315$ lb for 50 in-lb torque.

FS = 1.4 ULT, 1.25 limit, material allowable.

Bolt	Assumed A-286 Steel	$F_{TU} = 140000$ psi
Washer	Assumed A-286 Steel	$F_{TU} = 140000$ psi
G-10CR Isolators	Laminates $\perp$ (centerline)	$F_{TU} = 60000$ psi
Sidemount	6061-T6 Aluminum	$F_{TU} = 42000$ psi
		$F_{TY} = 35000$ psi

Bolthead to Washer

Assume MS167775 .190-32UNC screw dimensions

Assume NAS1149E0363P Washer

$$\begin{aligned} \text{Head OD} & .3125 - 2(.005) = .3025 \text{ minimum} \\ \text{Washer ID} & .203 + .010 = .213 \text{ maximum} \end{aligned}$$

$$A = \pi/4 (.3025^2 - .213^2) = .0362 \text{ in}^2 \text{ minimum}$$

$$F / A = \frac{1315}{.0362} = 36290 \text{ psi}$$

$$MS = \frac{140000}{1.4 \times 36290} - 1 = +1.8 \text{ Bolt / Washer}$$

Washer to .435 OD x .250 THK Washer

Assume NAS11440E0363P Washer

Washer OD .438-.005 = .433 min ID = .213 max
Isolator OD .435-.002 = .433 min (Assumed)

$$A = \pi/4 (.433^2 - .213^2) = .112 \text{ in}^2$$

$$F/A = \frac{1315}{.112} = 11781 \text{ psi}$$

$$MS = \frac{60000}{1.4 \times 11781} - 1 = +2.6 \text{ Isolator}$$

Isolator to Sidemount Ledge

Isolator OD .433 min (Assumed)
Sidemount ID .287 max

$$A = \pi/4 (.433^2 - .287^2) = .083 \text{ in}^2$$

$$F/A = \frac{1315}{.083} = 15928 \text{ psi}$$

$$MS = \frac{35000}{1.25 \times 15928} - 1 = +.76 \text{ Sidemount}$$

$$MS = \frac{42000}{1.4 \times 15928} - 1 = +.88 \text{ Sidemount}$$

Sidemount Ledge to 1333395-6 .590 Ø Isolator

Isolator OD .590-2 (.030) = .530 min
Sidemount ID .287 max

$$A = \pi/4 (.530^2 - .287^2) = .156 \text{ in}^2$$

$$F/A = \frac{1315}{.156} = 8433 \text{ psi}$$

$$MS = \frac{35000}{1.25 \times 8433} - 1 = +2.3 \text{ Sidemount Limit}$$

$$MS = \frac{42000}{1.4 \times 8433} - 1 = +2.6 \text{ Sidemount Ultimate}$$

.590Ø Isolator to Spacecraft

Isolator OD .590 min
Isolator ID .224 max (Assumed)

$$A = \pi / 4 (.590^2 - .224^2) = .234 \text{ in}^2$$

$$F / A = \frac{1315}{.234} = 5620 \text{ psi}$$

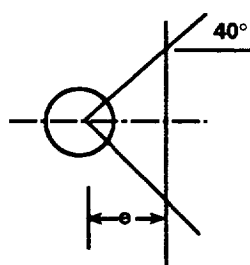
$$MS = \frac{60000}{1.4 \times 5620} - 1 = +6.6 \text{ Isolator}$$

Sidemount Mounting Bolts Shear Tearout

Maximum #10-32 screw shear load is from case 1 GRID 9834 from the condition of shear load reacted at both the 16 screws and the 2 pins.

$$F = \sqrt{480^2 + 35^2} = 481 \text{ lb}$$

Shear tearout of the aluminum sidemount at the lower, .590 $\varnothing$ isolator, per Bruhn



$$\begin{aligned} e &= .390 \\ d &= .5925 \\ t &= .250 \end{aligned} \quad \frac{e}{d} = .66$$

$$\begin{aligned} AS &= (e - d/2 \cos 40^\circ) (2t) \\ &= .082 \text{ in}^2 \end{aligned}$$

$$T = \frac{(1.4)(481)}{.082} = 8263 \text{ psi}$$

$$F_{ru} = 27000 \text{ psi}$$

$$MS = \frac{27000}{8263} - 1 = +2.3 \text{ Sidemount}$$

Bearing of .590 $\varnothing$ Isolator Onto Sidemount Hole per Maximum Shear Load

$$F_{\text{max}} = 481 \text{ lb} \quad \text{GRID9834 Case 1}$$

$$F_t = (.590) (.250) = .148 \text{ in}^2$$

$$\sigma = \frac{1.25 \times 481}{.148} = 4063 \text{ psi} \quad \text{Limit } w / FS = 1.25$$

With $e/D = .66 \ll 1.5$ Use $F_{bry} = F_{cy}$

$$F_{cy} = 35000 \text{ psi} \quad 6061\text{-T6}$$

$$MS = \frac{35000}{4063} - 1 = +7.6 \text{ Sidemount}$$

$$\text{Use } F_{bru} = F_{tu} = 42000 \text{ psi}$$

$$MS = \frac{42000}{\left(\frac{1.4 \times 481}{.148} \right)} - 1 = +8.2 \text{ Sidemount}$$

For the isolator use $F_{bru} = F_{cu \text{ edge}} = 35000 \text{ psi}$

$$MS = \frac{35000}{\left(\frac{1.4 \times 481}{.148} \right)} - 1 = +6.7 \text{ .540 } \varnothing \text{ isolator}$$

Other load cases are summarized in the summary table.

Thread Shear of .190-32UNF Screw Into Spacecraft Mounting Surface

Assumptions

- 1) Screw material is A-286 w/ $F_{TU}=140000 \text{ psi}$
- 2) Thread type .190-32UNF-3A
- 3) Spacecraft INT THD is of similar material as screw
- 4) Length of engagement of joint $\geq 1\varnothing$ ($\geq .190$)

Max shear load per Case 2 tensile max at GRID 7840 (all shear at shear pins)

$F=2523 \text{ lb}$ Preload + applied load with
assumed joint stiffness $k_b/k_b+k_m=1$
with $FS=1.4$

Shear area

$$AS = \frac{\pi E L_e}{2} = .05065 \text{ in}^2 \quad E = .1697$$

$$L_e = .190$$

Allowable, $F_{su} = .6 F_{TU} = 84000 \text{ psi}$

$$MS = \frac{84000}{\left(\frac{2523}{.05065} \right)} - 1 = +.69$$

♣ Spacecraft joint ok per assumptions

Other load cases are addressed in summary table.

Table 1 METSAT AMSU-A1 Margins of Safety Summary - All Elements
Design Loads Cases 1 through 8

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	STRESS [~] (psi)	MARGINS OF SAFETY		CASE EL TYPE
							YIELD	ULTIMATE	
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	5190	4.39	4.78	3 BEAM
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	4336	11.18	11.36	1 BEAM
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	2788	17.94	18.22	1 BEAM
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	3072	8.11	8.77	4 BEAM
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	2335	18.87	19.19	4 BEAM
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	2150	12.02	12.95	2 BEAM
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	4457	10.85	11.02	1 BEAM
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	5137	8.03	8.18	1 SHELL
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	8890	3.50	4.62	1 SHELL
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	3618	10.06	12.82	3 SHELL
11	LOWER RIGHT FRONT SUPT PANEL	1331447-1	ALUM/6061-T651	35000	42000	1500	17.67	19.00	1 BEAM
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1965	13.25	14.27	4 BEAM
13	UPPER RIGHT FRONT SUPT PANEL	1331390-1	ALUM/6061-T651	35000	42000	2150	12.02	12.95	2 BEAM
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	1711	15.36	16.53	1 SHELL
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	2210	11.67	12.57	2 SHELL
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	1729	15.19	16.35	4 SHELL
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	3636	6.70	7.25	2 BEAM
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	3541	6.91	7.47	1 BEAM
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	3730	6.51	7.04	1 BEAM
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	2122	12.20	13.14	1 BEAM
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	3111	8.00	8.64	4 SHELL
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	995	18.30	27.72	4 SHELL
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	3399	7.24	7.83	4 BEAM
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	3072	3.17	5.98	4 BEAM
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	529	35.29	53.01	1 SHELL
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	1981	13.13	14.14	3 SHELL
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	1958	13.30	14.32	4 SHELL
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	1950	26.08	26.47	4 BEAM
28	LOWER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	929	29.14	31.29	1 SHELL
29	POWER CONTROL/MONITOR, BKT	1356790-1	ALUM/6061-T6	35000	42000	3173	7.82	8.45	2 SHELL
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	898	20.38	30.82	1 SHELL
31	PWR CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	11370	2.10	6.66	2 BEAM
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	3198	7.76	8.38	2 SHELL
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	22234	0.26	0.35	4 SHELL
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	929	29.14	31.29	1 SHELL

DESIGN LOADS CASE 1 Gy=-20.6 Gx=-21.2, CASE 2 Gy=-20.6,Gx=21.2, CASE 3 Gy=-20.6,Gz=-19.6, CASE 4 Gy=-20.6,Gz=19.6

DESIGN LOADS CASE 5 Gy=20.6 Gx=-21.2, CASE 6 Gy=20.6,Gx=21.2, CASE 7 Gy=20.6,Gz=-19.6, CASE 8 Gy=20.6,Gz=19.6

[~]VON MISES STRESS FOR SHELL ELEMENTS, ABSOLUTE VALUE OF MAXIMUM PRINCIPAL STRESS OR MINIMUM PRINCIPAL STRESS FOR BEAM ELEMENTS.

Table 2 METSAT AMSU-A1 Margins of Safety - Shell Elements
Design Loads Case 1 Gy=20.6 Gx=21.2*

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	VON MISES STRESS (psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	748	36.43	39.11
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	3535	13.94	14.15
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	2000	25.40	25.79
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	1895	13.78	14.83
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	68000	718	63.62	64.66
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	1111	24.20	26.00
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	900	57.67	58.52
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	5137	8.03	8.18
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	8890	3.50	4.62
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	938	41.64	52.30
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	563	48.73	52.29
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1298	20.57	22.11
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	912	29.70	31.89
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	1711	15.36	16.53
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	2087	12.42	13.37
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	1564	16.90	18.18
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	1971	13.21	14.22
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	764	35.65	38.27
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	1341	19.88	21.37
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	397	69.53	74.57
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	2892	9.40	10.14
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	873	20.99	31.73
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	537	51.14	54.87
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	537	22.84	38.90
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	529	35.29	53.01
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	1018	26.50	28.47
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	869	31.22	33.52
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	*****		
28	LOWER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	777	35.04	37.61
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	2360	10.86	11.71
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	898	20.38	30.82
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	*****		
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	1810	14.47	15.57
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	9892	1.83	2.03
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	771	35.32	37.91

*ALSO DESIGN LOADS CASE 6 Gy=20.6 Gx=21.2

Table 3 METSAT AMSU-A1 Margins of Safety - Beam Elements
Design Loads Case 1 Gy=20.6 Gx=21.2*

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	MAXIMUM** STRESS (psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	1410	18.86	20.28
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	4336	11.18	11.36
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	2788	17.94	18.22
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	2291	11.22	12.09
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1618	27.68	28.14
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	1492	17.77	19.11
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	4457	10.85	11.02
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	2589	16.92	17.21
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	1702	22.50	28.38
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	419	94.47	118.33
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	1500	17.67	19.00
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1404	18.94	20.37
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	2122	12.20	13.14
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	1341	19.88	21.37
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	504	54.56	58.52
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	*****		
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	3580	6.82	7.38
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	3541	6.91	7.47
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	3730	6.51	7.04
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	2122	12.20	13.14
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	*****		
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	*****		
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	1667	15.80	17.00
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	331	37.67	63.74
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	*****		
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	*****		
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	*****		
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	1000	51.80	52.57
28	LOWER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	1602	31.96	32.44
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	*****		
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	*****		
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	10664	2.30	7.17
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	*****		
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	7690	2.64	2.90
34	UPPER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	1610	31.80	32.27

*ALSO DESIGN LOADS CASE 6 Gy=20.6 Gx=21.2

**ABSOLUTE VALUE OF MAXIMUM PRINCIPAL STRESS OR MINIMUM PRINCIPAL STRESS.

Table 4 METSAT AMSU-A1 Margins of Safety - Shell Elements
Design Loads Case 2 Gy=20.6 Gx=21.2*

ITEM NO.	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (PSI)	VON MISES STRESS (Psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	823	33.02	35.45
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	4116	11.83	12.02
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	1351	38.08	38.65
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	1284	20.81	22.36
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1584	28.29	28.76
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	982	27.51	29.55
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	1590	32.21	32.69
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	4612	9.06	9.22
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	1443	26.72	33.65
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	1120	34.71	43.64
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	577	47.53	50.99
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1402	18.97	20.40
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	885	30.64	32.90
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	1440	18.44	19.83
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	2210	11.67	12.57
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	1711	15.36	16.53
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	2184	11.82	12.74
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	903	30.01	32.22
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	1019	26.48	28.44
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	343	80.63	86.46
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	2752	9.17	9.90
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	853	21.51	32.50
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	739	36.89	39.60
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	525	23.38	39.82
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	525	35.57	53.42
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	1054	25.57	27.46
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	791	34.40	36.93
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	*****		
28	LOWER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	677	40.36	43.31
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	3173	7.82	8.45
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	858	21.38	32.30
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	*****		
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	3198	7.76	8.38
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	16940	0.65	0.77
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	689	39.64	42.54

ALSO DESIGN LOADS CASE 5 Gy=20.6 Gx=-21.2

Table 5 METSAT AMSU-A1 Margins of Safety - Beam Elements
Design Loads Case 2 Gy=-20.6 Gx=21.2

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	MAXIMUM [~] STRESS (psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	1284	20.81	22.36
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	3740	13.12	13.32
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	2184	23.18	23.53
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	1949	13.37	14.39
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1438	31.27	31.78
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	2150	12.02	12.95
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	2173	23.30	23.65
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	2287	19.29	19.61
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	1067	36.49	45.86
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	760	51.63	64.79
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	1392	19.11	20.55
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	992	27.23	29.24
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	2150	12.02	12.95
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	992	27.23	29.24
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	750	36.33	39.00
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	*****		
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	3636	6.70	7.25
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	3228	7.67	8.29
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	2911	8.62	9.31
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	1761	14.90	16.04
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	*****		
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	*****		
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	1824	14.35	15.45
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	332	37.55	63.54
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	*****		
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	*****		
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	*****		
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	1807	28.22	28.65
28	LOWER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	986	52.55	53.33
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	*****		
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	*****		
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	11370	2.10	6.66
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	*****		
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	8205	2.41	2.66
34	UPPER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	903	57.47	58.33

ALSO DESIGN LOADS CASE 5 Gy=20.6 Gx=-21.2

[~]ABSOLUTE VALUE OF MAXIMUM PRINCIPAL STRESS OR MINIMUM PRINCIPAL STRESS.

Table 6 METSAT AMSU-A1 Margins of Safety - Shell Elements
Design Loads Case 3 Gy=20.6 Gz=19.6*

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	VON MISES STRESS (psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	2072	12.51	13.48
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	1029	50.31	51.06
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	505	103.55	105.08
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	1242	21.54	23.15
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1799	24.79	25.21
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	854	31.79	34.13
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	1159	44.56	45.22
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	1196	37.80	38.42
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	4620	7.66	9.82
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	3618	10.06	12.82
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	188	147.94	158.57
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1555	17.01	18.29
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	303	91.41	98.01
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	851	31.90	34.25
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	1616	16.33	17.56
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	1672	15.75	16.94
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	666	41.04	44.05
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	208	133.62	143.23
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	459	60.00	64.36
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	50	559.00	599.00
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	3048	8.19	8.84
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	779	23.65	35.68
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	2362	10.85	11.70
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	1420	8.01	14.09
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	264	71.73	107.23
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	1981	13.13	14.14
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	1909	13.67	14.72
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	*****		
28	LOWER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	929	29.14	31.29
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	883	30.71	32.98
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	188	101.13	150.98
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	*****		
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	2191	11.78	12.69
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	9836	1.85	2.05
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	929	29.14	31.29

*ALSO DESIGN LOADS CASE 8 Gy=20.6 Gz=19.6

Table 7 METSAT AMSU-A1 Margins of Safety - Beam Elements
Design Loads Case 3 Gy=20.6 Gz=19.6*

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	MAXIMUM [†] STRESS (psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	5190	4.39	4.78
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	1219	42.31	42.95
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	753	69.12	70.14
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	1382	19.26	20.71
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1557	28.80	29.28
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	1104	24.36	26.17
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	3264	15.18	15.41
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	756	60.38	61.36
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	1581	24.30	30.63
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	1303	29.70	37.37
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	475	57.95	62.16
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1581	16.71	17.98
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	1432	18.55	19.95
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	691	39.52	42.42
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	568	48.30	51.82
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	*****		
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	909	29.80	32.00
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	794	34.26	36.78
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	2146	12.05	12.98
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	520	52.85	56.69
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	2633		
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	*****		
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	2633	9.63	10.39
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	2409	4.31	7.90
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	*****		
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	*****		
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	*****		
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	1104	46.83	47.52
28	LOWER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	950	54.58	55.39
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	*****		
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	*****		
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	3498	9.06	23.91
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	*****		
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	4732	4.92	5.34
34	UPPER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	966	53.66	54.46

* ALSO DESIGN LOADS CASE 8 Gy=20.6 Gz=19.6

[†] ABSOLUTE VALUE OF MAXIMUM PRINCIPAL STRESS OR MINIMUM PRINCIPAL STRESS.

Table 8 METSAT AMSU-A1 Margins of Safety - Shell Elements
Design Loads Case 4 Gy=20.6 Gz=19.6*

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	VON MISES STRESS (psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	2145	12.05	12.99
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	1594	32.12	32.61
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	1243	41.48	42.10
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	2721	9.29	10.03
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1588	28.22	28.69
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	1965	13.25	14.27
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	1697	30.11	30.57
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	1201	37.63	38.25
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	5017	6.97	8.97
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	3484	10.48	13.35
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	134	207.96	222.88
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1752	14.98	16.12
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	352	78.55	84.23
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	886	30.60	32.86
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	1652	15.95	17.16
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	1729	15.19	16.35
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	845	32.14	34.50
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	182	152.85	163.84
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	403	68.48	73.44
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	63	443.44	475.19
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	3111	8.00	8.64
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	995	18.30	27.72
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	3181	7.80	8.43
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	1910	5.70	10.22
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	173	109.98	164.15
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	1806	14.50	15.61
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	1958	13.30	14.32
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	*****		
28	LOWER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	785	34.67	37.22
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	908	29.84	32.04
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	193	98.48	147.04
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	*****		
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	1162	23.10	24.82
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	22234	0.26	0.35
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	785	34.67	37.22

*ALSO DESIGN LOADS CASE 7 Gy=20.6 GZ=-19.6

Table 9 METSAT AMSU-A1 Margins of Safety - Beam Elements
Design Loads Case 4 Gy=-20.6 Gz=19.6*

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	MAXIMUM [~] STRESS (psi)	MARGINS OF SAFETY	
							YIELD	ULTIMATE
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	4825	4.80	5.22
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	1193	43.26	43.90
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	2101	24.13	24.50
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	3072	8.11	8.77
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	2335	18.87	19.19
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	1950	13.36	14.38
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	2330	21.66	21.99
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	1353	33.29	33.84
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	1965	19.36	24.45
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	1597	24.05	30.31
11	LOWER RIGHT FRONT SUPPORT PANEL	1331447-1	ALUM/6061-T651	35000	42000	650	42.08	45.15
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	1965	13.25	14.27
13	UPPER RIGHT FRONT SUPPORT PANEL	1331390-1	ALUM/6061-T651	35000	42000	1913	13.64	14.68
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	926	29.24	31.40
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	464	59.34	63.66
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	*****		
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	2045	12.69	13.67
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	1008	26.78	28.76
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	1884	13.86	14.92
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	470	58.57	62.83
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	*****		
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	*****		
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	3399	7.24	7.83
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	3072	3.17	5.98
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	*****		
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	*****		
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	*****		
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	1950	26.08	26.47
28	LOWER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	1155	44.71	45.38
29	POWER CONTROL/MONITOR, BRACKET	1356790-1	ALUM/6061-T6	35000	42000	*****		
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	*****		
31	POWER CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	2998	10.74	28.07
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	*****		
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	8876	2.15	2.38
34	UPPER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	1127	45.85	46.53

*ALSO DESIGN LOADS CASE 7 Gy=20.6 GZ=-19.6

[~]ABSOLUTE VALUE OF MAXIMUM PRINCIPAL STRESS OR MINIMUM PRINCIPAL STRESS.

**Table 10 METSAT AMSU-A1 Margins of Safety Summary - All Elements
Random Vibration 8.8 GRMS***

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	3 SIGMA [~] STRESS (psi)	MARGINS OF SAFETY		DIRECTION EL TYPE
							YIELD	ULTIMATE	
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	6006	3.66	4.00	Z BEAM
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	14950	2.53	2.58	X BEAM
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	8552	5.17	5.26	X BEAM
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	5897	3.75	4.09	X BEAM
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	2040	21.75	22.11	X SHELL
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	5175	4.41	4.80	X BEAM
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	16247	2.25	2.30	X BEAM
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	18067	1.57	1.61	X SHELL
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	6727	4.95	6.43	Y SHELL
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	4722	7.47	9.59	Z SHELL
11	LOWER RIGHT FRONT SUPT PANEL	1331447-1	ALUM/6061-T651	35000	42000	3859	6.26	6.77	X BEAM
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	4551	5.15	5.59	Y SHELL
13	UPPER RIGHT FRONT SUPT PANEL	1331390-1	ALUM/6061-T651	35000	42000	6583	3.25	3.56	X BEAM
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	3630	6.71	7.26	X SHELL
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	4960	4.65	5.05	X SHELL
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	2680	9.45	10.19	X SHELL
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	5977	3.68	4.02	X BEAM
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	8499	2.29	2.53	X BEAM
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	9028	2.10	2.32	X BEAM
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	10464	1.68	1.87	X BEAM
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	6990	3.01	3.29	Y SHELL
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	1844	9.41	14.49	Y SHELL
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	7705	2.63	2.89	X BEAM
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	3434	2.73	5.24	Z BEAM
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	1674	10.47	16.07	X SHELL
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	6846	3.09	3.38	Y SHELL
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	7903	2.54	2.80	Y SHELL
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	2583	19.44	19.74	Y BEAM
28	LOWER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	8501	2.29	2.53	X SHELL
29	POWER CONTROL/MONITOR, BKT	1356790-1	ALUM/6061-T6	35000	42000	8276	2.38	2.62	X SHELL
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	3195	5.01	7.94	X SHELL
31	PWR CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	22042	0.60	2.95	X BEAM
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	6230	3.49	3.82	X SHELL
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	24075	0.16	0.25	Z SHELL
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	7124	2.93	3.21	X SHELL

*RANDOM VIBRATION LOAD CASES 8.8 GRMS INDEPENDENTLY IN X, Y, AND Z

[~]MAXIMUM PRINCIPAL STRESS BASED ON ASSUMED IN PHASE COMPONENT STRESSES

**Table 11 METSAT AMSU-A1 Margins of Safety - All Elements
Random Vibration 8.8 GRMS - X Direction**

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	3 SIGMA [~] STRESS (psi)	MARGINS OF SAFETY		DIRECTION EL TYPE
							YIELD	ULTIMATE	
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	2620	9.69	10.45	X BEAM
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	14950	2.53	2.58	X BEAM
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	8552	5.17	5.26	X BEAM
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	5897	3.75	4.09	X BEAM
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	2040	21.75	22.11	X SHELL
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	5175	4.41	4.80	X BEAM
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	16247	2.25	2.30	X BEAM
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	18067	1.57	1.61	X SHELL
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	5714	6.00	7.75	X SHELL
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	4584	7.73	9.91	X SHELL
11	LOWER RIGHT FRONT SUPT PANEL	1331447-1	ALUM/6061-T651	35000	42000	3859	6.26	6.77	X BEAM
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	3065	8.14	8.79	X BEAM
13	UPPER RIGHT FRONT SUPT PANEL	1331390-1	ALUM/6061-T651	35000	42000	6583	3.25	3.56	X BEAM
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	3630	6.71	7.26	X SHELL
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	4960	4.65	5.05	X SHELL
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	2680	9.45	10.19	X SHELL
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	5977	3.68	4.02	X BEAM
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	8499	2.29	2.53	X BEAM
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	9028	2.10	2.32	X BEAM
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	10464	1.68	1.87	X BEAM
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	3626	6.72	7.27	X SHELL
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	900	20.33	30.75	X SHELL
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	7705	2.63	2.89	X BEAM
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	2809	3.56	6.63	X SHELL
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	1674	10.47	16.07	X SHELL
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	5524	4.07	4.43	X SHELL
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	3468	7.07	7.65	X SHELL
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	1815	28.09	28.52	X BEAM
28	LOWER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	8501	2.29	2.53	X SHELL
29	POWER CONTROL/MONITOR, BKT	1356790-1	ALUM/6061-T6	35000	42000	8276	2.38	2.62	X SHELL
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	3195	5.01	7.94	X SHELL
31	PWR CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	22042	0.60	2.95	X BEAM
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	6230	3.49	3.82	X SHELL
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	7719	2.63	2.89	X BEAM
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	7124	2.93	3.21	X SHELL

*MAXIMUM PRINCIPAL STRESS BASED ON ASSUMED IN PHASE COMPONENT STRESSES

**Table 12 METSAT AMSU-A1 Margins of Safety - All Elements
Random Vibration 8.8 GRMS - Y Direction**

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	3 SIGMA [™] STRESS (psi)	MARGINS OF SAFETY		DIRECTION EL TYPE
							YIELD	ULTIMATE	
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	5884	3.76	4.10	Y BEAM
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	4128	11.79	11.98	Y SHELL
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	3200	15.50	15.74	Y BEAM
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	3298	7.49	8.10	Y BEAM
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1514	29.65	30.14	Y SHELL
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	4269	5.56	6.03	Y BEAM
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	13188	3.00	3.06	Y BEAM
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	5201	7.92	8.06	Y SHELL
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	6727	4.95	6.43	Y SHELL
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	4286	8.33	10.67	Y SHELL
11	LOWER RIGHT FRONT SUPT PANEL	1331447-1	ALUM/6061-T651	35000	42000	1317	20.26	21.78	Y BEAM
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	4551	5.15	5.59	Y SHELL
13	UPPER RIGHT FRONT SUPT PANEL	1331390-1	ALUM/6061-T651	35000	42000	5437	4.15	4.52	Y BEAM
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	2748	9.19	9.92	Y SHELL
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	1316	20.28	21.80	Y SHELL
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	2528	10.08	10.87	Y SHELL
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	2873	8.75	9.44	Y BEAM
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	2885	8.71	9.40	Y BEAM
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	3064	8.14	8.79	Y BEAM
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	3790	6.39	6.92	Y BEAM
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	6990	3.01	3.29	Y SHELL
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	1844	9.41	14.49	Y SHELL
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	6495	3.31	3.62	Y BEAM
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	3301	2.88	5.49	Y SHELL
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	495	37.79	56.72	Y SHELL
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	6846	3.09	3.38	Y SHELL
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	7903	2.54	2.80	Y SHELL
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	2583	19.44	19.74	Y BEAM
28	LOWER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	10943	3.83	3.90	Y BEAM
29	POWER CONTROL/MONITOR, BKT	1356790-1	ALUM/6061-T6	35000	42000	1443	18.40	19.79	Y SHELL
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	1209	14.88	22.63	Y SHELL
31	PWR CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	5264	5.69	15.55	Y BEAM
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	1688	15.59	16.77	Y SHELL
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	12564	1.23	1.39	Y SHELL
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	4558	5.14	5.58	Y SHELL

*MAXIMUM PRINCIPAL STRESS BASED ON ASSUMED IN PHASE COMPONENT STRESSES

Table 13 METSAT AMSU-A1 Margins of Safety - All Elements
Random Vibration 8.8 GRMS - Z Direction

ITEM NO.*	DESCRIPTION	PART NUMBER	MATERIAL/ ALLOY	YIELD (psi)	ULTIMATE (psi)	3 SIGMA [~] STRESS (psi)	MARGINS OF SAFETY		DIRECTION EL TYPE
							YIELD	ULTIMATE	
1	LOWER BASEPLATE ASSEMBLY	1331404-1	ALUM/6061-T651	35000	42000	6006	3.66	4.00	Z BEAM
2	LOWER MOTOR MOUNT PANEL	1331414-1	ALUM/7075-T651	66000	75000	2939	16.97	17.23	Z SHELL
3	UPPER MOTOR MOUNT PANEL	1331389-1	ALUM/7075-T651	66000	75000	2299	21.97	22.30	Z BEAM
4	LOWER FRONT PANEL	1331401-1	ALUM/6061-T651	35000	42000	3325	7.42	8.02	Z BEAM
5	LOWER AFT PANEL	1331652-1	ALUM/2024-T851	58000	66000	1723	25.93	26.36	Z BEAM
6	UPPER BASEPLATE ASSEMBLY	1331356-3	ALUM/6061-T651	35000	42000	2635	9.63	10.39	Z BEAM
7	UPPER FRONT PANEL	1331352-3	ALUM/7075-T651	66000	75000	6681	6.90	7.02	Z BEAM
8	UPPER AFT PANEL	1331642-3	ALUM/2024-T851	58000	66000	5563	7.34	7.47	Z SHELL
9	LOWER RF SHELF ASSEMBLY	1356429-1	BE/SR-200E	50000	70000	4532	7.83	10.03	Z SHELL
10	UPPER RF SHELF ASSEMBLY	1356409-1	BE/SR-200E	50000	70000	4722	7.47	9.59	Z SHELL
11	LOWER RIGHT FRONT SUPT PANEL	1331447-1	ALUM/6061-T651	35000	42000	1202	22.29	23.96	Z BEAM
12	LOWER RIGHT PANEL	1331650-1	ALUM/6061-T6	35000	42000	2626	9.66	10.42	Z SHELL
13	UPPER RIGHT FRONT SUPT PANEL	1331390-1	ALUM/6061-T651	35000	42000	3201	7.75	8.37	Z BEAM
14	UPPER RIGHT PANEL	1331651-1	ALUM/6061-T6	35000	42000	2300	11.17	12.04	Z SHELL
15	TOP PANEL	1331648-1	ALUM/6061-T6	35000	42000	1637	16.10	17.33	Z SHELL
16	LEFT PANEL	1331640-1	ALUM/6061-T6	35000	42000	2235	11.53	12.42	Z SHELL
17	LOWER LEFT WARMLOAD SHIELD	1331445-1	ALUM/6061-T6	35000	42000	4057	5.90	6.39	Z BEAM
18	LOWER RIGHT WARMLOAD SHIELD	1331405-1	ALUM/6061-T6	35000	42000	3242	7.64	8.25	Z BEAM
19	UPPER LEFT WARMLOAD SHIELD	1331647-1	ALUM/6061-T6	35000	42000	3051	8.18	8.83	Z BEAM
20	UPPER RIGHT WARMLOAD SHIELD	1331646-1	ALUM/6061-T6	35000	42000	2221	11.61	12.51	Z BEAM
21	LOWER CARD CAGE ASSEMBLY	1331600-1	ALUM/6061-T6	35000	42000	4587	5.10	5.54	Z SHELL
22	LOWER CARD	1331600-1	REINF PLASTIC	24000	40000	543	34.36	51.62	Z SHELL
23	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T6	35000	42000	6968	3.02	3.31	Z BEAM
23a	UPPER CARD CAGE ASSEMBLY	1331162-1	ALUM/6061-T4	16000	30000	3434	2.73	5.24	Z BEAM
24	UPPER CARD	1331162-1	REINF PLASTIC	24000	40000	563	33.10	49.75	Z SHELL
25	LOWER CALIBRATION SOURCE ASSY	1331380-1	ALUM/6061-T6	35000	42000	5491	4.10	4.46	Z SHELL
26	UPPER CALIBRATION SOURCE ASSY	1331380-2	ALUM/6061-T6	35000	42000	4868	4.75	5.16	Z SHELL
27	BEAM SUPPORT	1331406-1	ALUM/7075-T6	66000	75000	2160	23.44	23.80	Z BEAM
28	LOWER REFLECTOR	1355777-1	ALUM/7075-T6	66000	75000	7874	5.71	5.80	Z BEAM
29	POWER CONTROL/MONITOR, BKT	1356790-1	ALUM/6061-T6	35000	42000	2155	11.99	12.92	Z SHELL
30	POWER CNTL/MNTR ASSY, PWB	1356962-1	REINF PLASTIC	24000	40000	1243	14.45	21.99	Z SHELL
31	PWR CNTL/MNTR ASSY, STANDOFFS	1356962-1	CRES 1/4 HARD	44000	122000	6954	4.06	11.53	Z BEAM
32	RADIATOR PANEL	1331511-1	ALUM/6061-T6	35000	42000	1282	20.84	22.40	Z SHELL
33	SIDEMOUNT ASSEMBLY	1331552-1	ALUM/6061-T6	35000	42000	24075	0.16	0.25	Z SHELL
34	UPPER REFLECTOR	1355777-1	ALUM/6061-T6	35000	42000	4385	5.39	5.84	Z SHELL

[~]MAXIMUM PRINCIPAL STRESS BASED ON ASSUMED IN PHASE COMPONENT STRESSES

Table 14

SUMMARY - RATTLESPLACE OF THE LOWER CARD CAGE CIRCUIT CARDS					
CASE	GRID	GRID		LOAD	$3\sigma \Delta X$
1	4829	4869		X	0.02540
2	4829	4869		Y	0.00961
3	4829	4869		Z	0.00986
MINIMUM					0.037
GAP					
SUMMARY - RATTLESPLACE OF THE UPPER CARD CAGE CIRCUIT CARDS					
CASE	GRID	GRID		LOAD	$3\sigma \Delta X$
1	11308	11875		X	0.00237
2	11300	11867		Y	0.00451
3	11300	11867		Z	0.00095
MINIMUM					0.137
GAP					

Table 15

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gx=-21.2												
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	APPLIED	APPLIED	SHEAR	TOTAL	SHEAR	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	SHEAR	SHEAR	FS	SHEAR	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	T1 (LB)	T3 (LB)		(LB)	(LB)	SAFETY
1	7240	246	1.4	1315	1659	2800	-20	-201	1.4	282	1273	
	7255	120	1.4	1315	1483	2800	172	-86	1.4	270	1273	
	7446	2	1.4	1315	1318	2800	61	-15	1.4	88	1273	
	7462	140	1.4	1315	1511	2800	27	69	1.4	104	1273	
	7497	44	1.4	1315	1377	2800	72	29	1.4	109	1273	
	7507	259	1.4	1315	1678	2800	125	103	1.4	227	1273	
	7555	9	1.4	1315	1327	2800	35	-43	1.4	78	1273	
	7745	80	1.4	1315	1426	2800	43	-59	1.4	102	1273	
	7840	183	1.4	1315	1572	2800	139	47	1.4	206	1273	
	7933	105	1.4	1315	1461	2800	89	-22	1.4	129	1273	
	8313	140	1.4	1315	1511	2800	398	157	1.4	599	1273	0.49
	9576	388	1.4	1315	1858	2800	290	-68	1.4	418	1273	0.43
	9834	440	1.4	1315	1930	2800	480	35	1.4	674	1273	0.23
	10271	603	1.4	1315	2159	2800	60	238	1.4	343	1273	0.27
	10703	383	1.4	1315	1851	2800	206	-113	1.4	329	1273	
	10748	68	1.4	1315	1410	2800	38	-104	1.4	155	1273	
*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 1 AND 6												

Table 16

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gx=21.2												
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	APPLIED	APPLIED	SHEAR	TOTAL	SHEAR	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	SHEAR	SHEAR	FS	SHEAR	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	T1 (LB)	T3 (LB)		(LB)	(LB)	SAFETY
2	7240	446	1.4	1315	1939	2800	19	284	1.4	399	1273	
	7255	104	1.4	1315	1461	2800	-245	-99	1.4	370	1273	
	7446	2	1.4	1315	1317	2800	-219	-4	1.4	307	1273	
	7462	184	1.4	1315	1572	2800	-176	-213	1.4	387	1273	
	7497	51	1.4	1315	1387	2800	-180	-57	1.4	264	1273	
	7507	367	1.4	1315	1829	2800	-189	-123	1.4	315	1273	
	7555	658	1.4	1315	2236	2800	-19	57	1.4	85	1273	0.25
	7745	279	1.4	1315	1706	2800	-74	-117	1.4	194	1273	
	7840	631	1.4	1315	2198	2800	-14	259	1.4	363	1273	0.24
	7933	161	1.4	1315	1540	2800	-33	-14	1.4	51	1273	
	8313	304	1.4	1315	1740	2800	-266	120	1.4	409	1273	
	9576	270	1.4	1315	1693	2800	-149	4	1.4	209	1273	
	9834	248	1.4	1315	1662	2800	-441	28	1.4	619	1273	0.39
	10271	279	1.4	1315	1706	2800	-254	-128	1.4	398	1273	
	10703	66	1.4	1315	1407	2800	-109	-72	1.4	183	1273	
	10748	109	1.4	1315	1467	2800	-10	-29	1.4	43	1273	

*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 2 AND 5

Table 17

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gz=-19.6												
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	APPLIED	APPLIED	SHEAR	TOTAL	SHEAR	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	SHEAR	SHEAR	FS	SHEAR	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	T1 (LB)	T3 (LB)		(LB)	(LB)	SAFETY
3	7240	441	1.4	1315	1933	2800	156	323	1.4	502	1273	0.34
	7255	386	1.4	1315	1856	2800	-180	143	1.4	322	1273	
	7446	58	1.4	1315	1396	2800	6	85	1.4	119	1273	
	7462	509	1.4	1315	2028	2800	-163	287	1.4	462	1273	0.31
	7497	95	1.4	1315	1447	2800	2	76	1.4	106	1273	
	7507	325	1.4	1315	1771	2800	114	157	1.4	272	1273	
	7555	236	1.4	1315	1645	2800	13	93	1.4	132	1273	
	7745	175	1.4	1315	1560	2800	-35	106	1.4	156	1273	
	7840	93	1.4	1315	1445	2800	33	262	1.4	370	1273	
	7933	26	1.4	1315	1351	2800	-25	9	1.4	37	1273	
	8313	15	1.4	1315	1336	2800	-42	81	1.4	128	1273	
	9576	123	1.4	1315	1487	2800	-90	95	1.4	183	1273	
	9834	183	1.4	1315	1571	2800	142	16	1.4	200	1273	
	10271	187	1.4	1315	1577	2800	-28	224	1.4	316	1273	
	10703	12	1.4	1315	1332	2800	-9	50	1.4	71	1273	
	10748	108	1.4	1315	1466	2800	-29	85	1.4	126	1273	

*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 3 AND 8

Table 18

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gz=19.6												
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	APPLIED	APPLIED	SHEAR	TOTAL	SHEAR	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	SHEAR	SHEAR	FS	SHEAR	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	T1 (LB)	T3 (LB)		(LB)	(LB)	SAFETY
4	7240	242	1.4	1315	1653	2800	-158	-239	1.4	401	1273	
	7255	402	1.4	1315	1878	2800	107	-328	1.4	484	1273	
	7446	61	1.4	1315	1401	2800	-165	-104	1.4	273	1273	
	7462	553	1.4	1315	2089	2800	14	-431	1.4	604	1273	0.2
	7497	102	1.4	1315	1457	2800	-110	-104	1.4	212	1273	
	7507	433	1.4	1315	1921	2800	-178	-177	1.4	351	1273	
	7555	414	1.4	1315	1895	2800	3	-79	1.4	110	1273	
	7745	184	1.4	1315	1573	2800	4	-281	1.4	394	1273	
	7840	721	1.4	1315	2325	2800	91	43	1.4	142	1273	0.2
	7933	240	1.4	1315	1651	2800	81	-46	1.4	130	1273	
	8313	459	1.4	1315	1958	2800	174	196	1.4	367	1273	
	9576	781	1.4	1315	2408	2800	231	-159	1.4	393	1273	0.14
	9834	9	1.4	1315	1328	2800	-104	46	1.4	159	1273	
	10271	695	1.4	1315	2288	2800	-166	-114	1.4	282	1273	0.21
	10703	461	1.4	1315	1960	2800	106	-234	1.4	360	1273	
	10748	285	1.4	1315	1714	2800	56	-218	1.4	315	1273	
*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 4 AND 7												

Table 19

METSAT AMSU A1 SIDEMOUNT SHEAR PINS SHEAR TEAROUT MARGINS OF SAFETY									
LOAD	BOLT	COMP	APPLIED	APPLIED	TOTAL	SHEAR	FS	SHEAR	MS
CASE	GRID		SHEAR	SHEAR	SHEAR	TEAROUT		Fsu	
			T1 (LB)	T3 (LB)	(LB)	(PSI)		(PSI)	
1	7855	SIDEMT	1771	45	1772	14520	1.4	27000	0.33
2	7855	SIDEMT	-1615	-45	1616	13242	1.4	27000	0.46
3	7855	SIDEMT	4	1910	1910	15655	1.4	27000	0.23
4	7855	SIDEMT	152	-1910	1916	15704	1.4	27000	0.23
METSAT AMSU-A1 SIDEMOUNT SHEAR PINS BEARING MARGINS OF SAFETY									
LOAD	BOLT	COMP	APPLIED	APPLIED	TOTAL	BEARING	FS	ALLOW	MS
CASE	GRID		LOAD	LOAD	LOAD	STRESS		Fcy/Ftu	
			T1 (LB)	T3 (LB)	(LB)	(PSI)		(PSI)	
1	7855	SIDEMT	1771	45	1772	15073	1.25	35000	0.86
	7855	SIDEMT	1771	45	1772	15073	1.4	42000	0.99
2	7855	SIDEMT	-1615	-45	1616	13746	1.25	35000	1.04
	7855	SIDEMT	-1615	-45	1616	13746	1.4	42000	1.18
3	7855	SIDEMT	4	1910	1910	16251	1.25	35000	0.72
	7855	SIDEMT	4	1910	1910	16251	1.4	42000	0.85
4	7855	SIDEMT	152	-1910	1916	16302	1.25	35000	0.72
	7855	SIDEMT	152	-1910	1916	16302	1.4	42000	0.84

Table 20

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gx=-21.2							
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	SAFETY
1	7240	118	1.4	1315	1480	2800	0.89
	7255	83	1.4	1315	1431	2800	0.96
	7446	1	1.4	1315	1316	2800	1.13
	7462	169	1.4	1315	1552	2800	0.80
	7497	53	1.4	1315	1389	2800	1.02
	7507	219	1.4	1315	1622	2800	0.73
	7555	112	1.4	1315	1472	2800	0.90
	7745	17	1.4	1315	1339	2800	1.09
	7840	54	1.4	1315	1391	2800	1.01
	7933	91	1.4	1315	1442	2800	0.94
	8313	130	1.4	1315	1497	2800	0.87
	9576	381	1.4	1315	1848	2800	0.51
	9834	280	1.4	1315	1707	2800	0.64
	10271	810	1.4	1315	2449	2800	0.14
	10703	466	1.4	1315	1967	2800	0.42
	10748	100	1.4	1315	1455	2800	0.92
*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 1 AND 6							
*ALL SHEAR LOAD REACTED AT SHEAR PINS							

Table 21

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gx=21.2							
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	SAFETY
2	7240	209	1.4	1315	1608	2800	0.74
	7255	58	1.4	1315	1396	2800	1.01
	7446	7	1.4	1315	1325	2800	1.11
	7462	167	1.4	1315	1549	2800	0.81
	7497	44	1.4	1315	1377	2800	1.03
	7507	240	1.4	1315	1651	2800	0.70
	7555	817	1.4	1315	2459	2800	0.14
	7745	273	1.4	1315	1697	2800	0.65
	7840	863	1.4	1315	2523	2800	0.11
	7933	105	1.4	1315	1462	2800	0.92
	8313	398	1.4	1315	1872	2800	0.50
	9576	287	1.4	1315	1717	2800	0.63
	9834	47	1.4	1315	1381	2800	1.03
	10271	128	1.4	1315	1494	2800	0.87
	10703	195	1.4	1315	1588	2800	0.76
	10748	18	1.4	1315	1340	2800	1.09
*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 2 AND 5							
*ALL SHEAR LOAD REACTED AT SHEAR PINS							

Table 22

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gz=-19.6							
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	SAFETY
3	7240	286	1.4	1315	1715	2800	0.63
	7255	424	1.4	1315	1909	2800	0.47
	7446	59	1.4	1315	1398	2800	1.00
	7462	493	1.4	1315	2005	2800	0.40
	7497	101	1.4	1315	1456	2800	0.92
	7507	317	1.4	1315	1759	2800	0.59
	7555	322	1.4	1315	1766	2800	0.59
	7745	272	1.4	1315	1696	2800	0.65
	7840	61	1.4	1315	1400	2800	1.00
	7933	50	1.4	1315	1385	2800	1.02
	8313	80	1.4	1315	1427	2800	0.96
	9576	68	1.4	1315	1410	2800	0.99
	9834	244	1.4	1315	1657	2800	0.69
	10271	274	1.4	1315	1699	2800	0.65
	10703	154	1.4	1315	1531	2800	0.83
	10748	146	1.4	1315	1519	2800	0.84
*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 3 AND 8							
*ALL SHEAR LOAD REACTED AT SHEAR PINS							

Table 23

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MARGINS OF SAFETY - Gy=-20.6 Gz=19.6							
LOAD	BOLT	APPLIED	TENSILE	PRELOAD	TOTAL	TENSILE	MARGIN
CASE	GRID	TENSION	FS	TENSION	TENSION	ALLOW	OF
		T2 (LB)*		(LB)	(LB)	(LB)	SAFETY
4	7240	195	1.4	1315	1588	2800	0.76
	7255	448	1.4	1315	1942	2800	0.44
	7446	67	1.4	1315	1409	2800	0.99
	7462	491	1.4	1315	2002	2800	0.40
	7497	92	1.4	1315	1444	2800	0.94
	7507	337	1.4	1315	1787	2800	0.57
	7555	382	1.4	1315	1850	2800	0.51
	7745	17	1.4	1315	1339	2800	1.09
	7840	856	1.4	1315	2513	2800	0.11
	7933	146	1.4	1315	1519	2800	0.84
	8313	607	1.4	1315	2165	2800	0.29
	9576	736	1.4	1315	2345	2800	0.19
	9834	11	1.4	1315	1330	2800	1.10
	10271	665	1.4	1315	2246	2800	0.25
	10703	424	1.4	1315	1909	2800	0.47
	10748	264	1.4	1315	1685	2800	0.66
*ALL TENSILE LOADS MADE POSITIVE TO ACCOUNT FOR LOAD CASES 4 AND 7							
*ALL SHEAR LOAD REACTED AT SHEAR PINS							

Table 24

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS MEMBER COMPRESSION MARGINS OF SAFETY											
LOAD	MEMBER	MEMBER	APPLIED	BEARING	BEARING	FS	ALLOW	MS			
CASE	1	2	LOAD	AREA	STRESS		Ftu				
			(LB)	(IN2)	(PSI)		(PSI)				
PRELOAD	BOLT	WASHER	1315	0.036	36290	1.40	140000	1.76			
	WASHER	.435 ISO	1315	0.112	11781	1.40	60000	2.64			
	.435 ISO	BASEPL	1315	0.083	15928	1.25	35000	0.76			
	.435 ISO	BASEPL	1315	0.083	15928	1.40	42000	0.88			
	BASEPL	.590 ISO	1315	0.156	8433	1.25	35000	2.32			
	BASEPL	.590 ISO	1315	0.156	8433	1.40	42000	2.56			
	.590 ISO	SPCCR	1315	0.234	5620	1.40	60000	6.63			
METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS THREAD SHEAR MARGINS OF SAFETY											
LOAD	INT/EXT	GRID	PRELOAD	APPLIED	APPLIED	JOINT	TOTAL	SHEAR	THREAD	ALLOW	MARGIN
CASE	THREAD			LOAD	LOAD	STIFF	LOAD	AREA	SHEAR	Fsu	OF
				LB	FS	FACTOR	LB	SQ IN	PSI	PSI	SAFETY
1	EXTERNL	10271	1315	810	1.4	1	2449	0.05065	48351	84000	0.74
	.190-32UNF										
	A-286 SCR										
2	EXTERNL	7840	1315	863	1.4	1	2523.2	0.05065	49816	84000	0.69
	.190-32UNF										
	A-286 SCR										
3	EXTERNL	7462	1315	493	1.4	1	2005.2	0.05065	39589	84000	1.12
	.190-32UNF										
	A-286 SCR										
4	EXTERNL	7840	1315	856	1.4	1	2513.4	0.05065	49623	84000	0.69
	.190-32UNF										
	A-286 SCR										
*ALL SHEAR LOAD REACTED AT SHEAR PINS											

Table 25

METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS SHEAR TEAROUT MARGINS OF SAFETY									
LOAD	BOLT	COMP	APPLIED	APPLIED	TOTAL	SHEAR	FS	SHEAR	MS
CASE	GRID		SHEAR	SHEAR	SHEAR	TEAROUT		Fsu	
			T1 (LB)	T3 (LB)	(LB)	(PSI)		(PSI)	
1	9834	SIDEMT	480	35	481	5905	1.4	27000	2.27
2	9834	SIDEMT	-441	28	442	5422	1.4	27000	2.56
3	7240	SIDEMT	156	323	359	4401	1.4	27000	3.38
4	7462	SIDEMT	14	-431	431	5291	1.4	27000	2.64
METSAT AMSU-A1 SIDEMOUNT MOUNTING BOLTS BEARING MARGINS OF SAFETY									
LOAD	BOLT	COMP	APPLIED	APPLIED	TOTAL	BEARING	FS	ALLOW	MS
CASE	GRID		LOAD	LOAD	LOAD	STRESS		Fcy/Ftu	
			T1 (LB)	T3 (LB)	(LB)	(PSI)		(PSI)	
1		SIDEMT	480	35	481	3263	1.25	35000	7.58
		SIDEMT	480	35	481	3263	1.4	42000	8.19
		.590 ISO	480	35	481	3263	1.4	35000	6.66
2		SIDEMT	-441	28	442	2996	1.25	35000	8.35
		SIDEMT	-441	28	442	2996	1.4	35000	7.34
		.590 ISO	-441	28	442	2996	1.4	35000	7.34
3		SIDEMT	156	323	359	2432	1.25	35000	10.51
		SIDEMT	156	323	359	2432	1.4	35000	9.28
		.590 ISO	156	323	359	2432	1.4	35000	9.28
4		SIDEMT	14	-431	431	2924	1.25	35000	8.58
		SIDEMT	14	-431	431	2924	1.4	35000	7.55
		.590 ISO	14	-431	431	2924	1.4	35000	7.55

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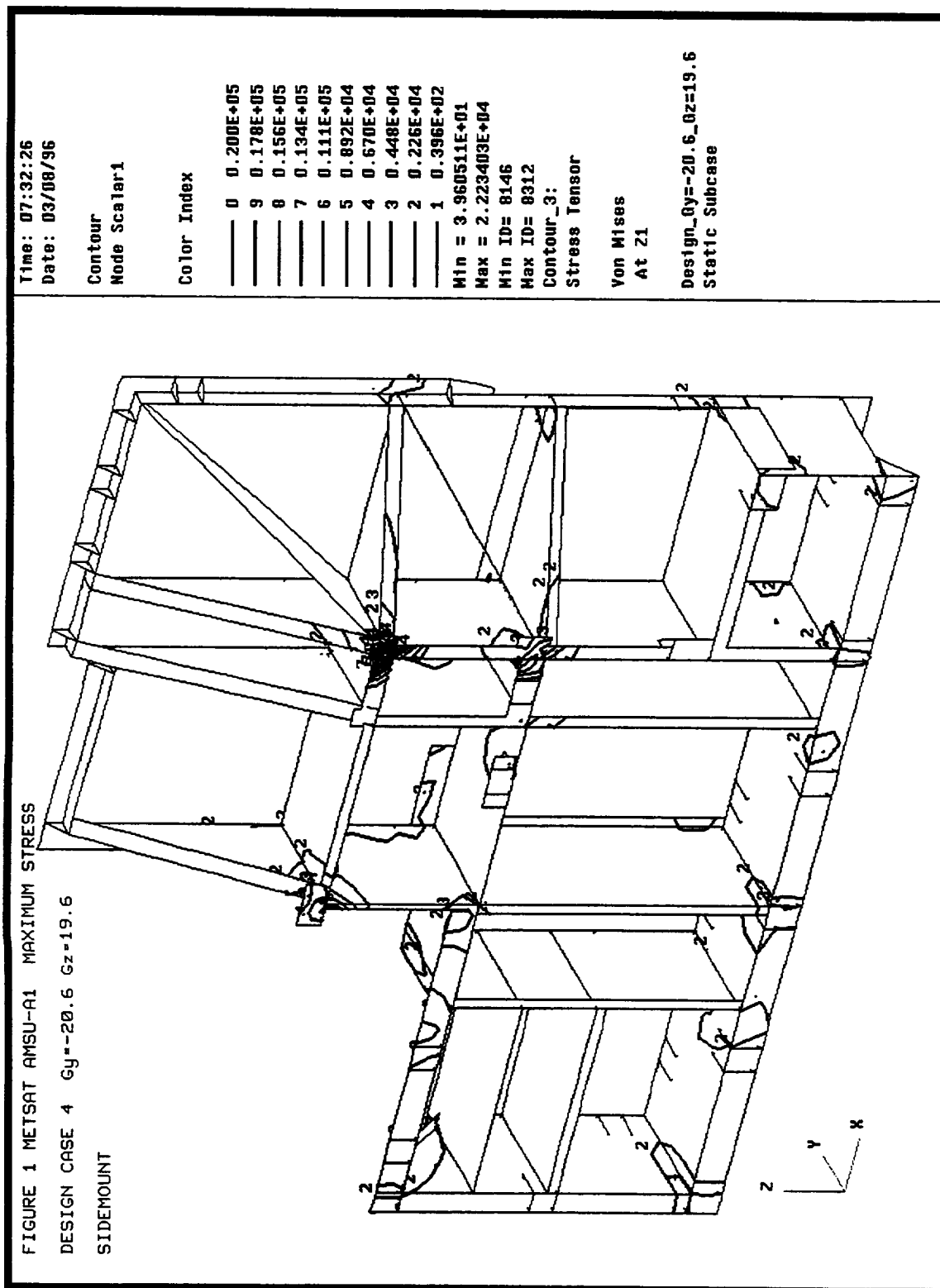


Figure 1 METSAT AMSU-A1 Maximum Stress
Design Case 4 $G_y = -20.6$ $G_z = 19.6$ Sidemount

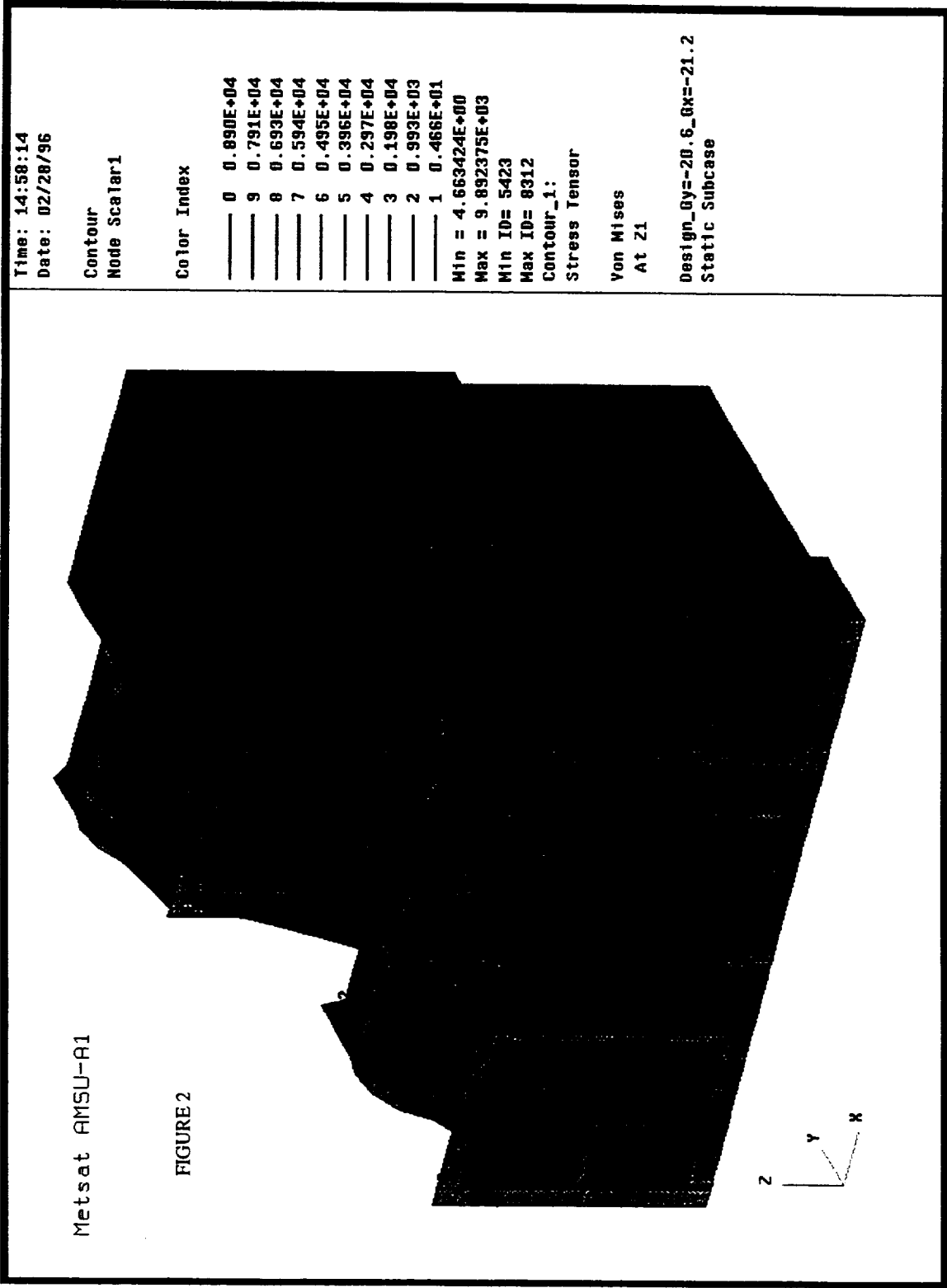


Figure 2 METSAT AMSU-A1

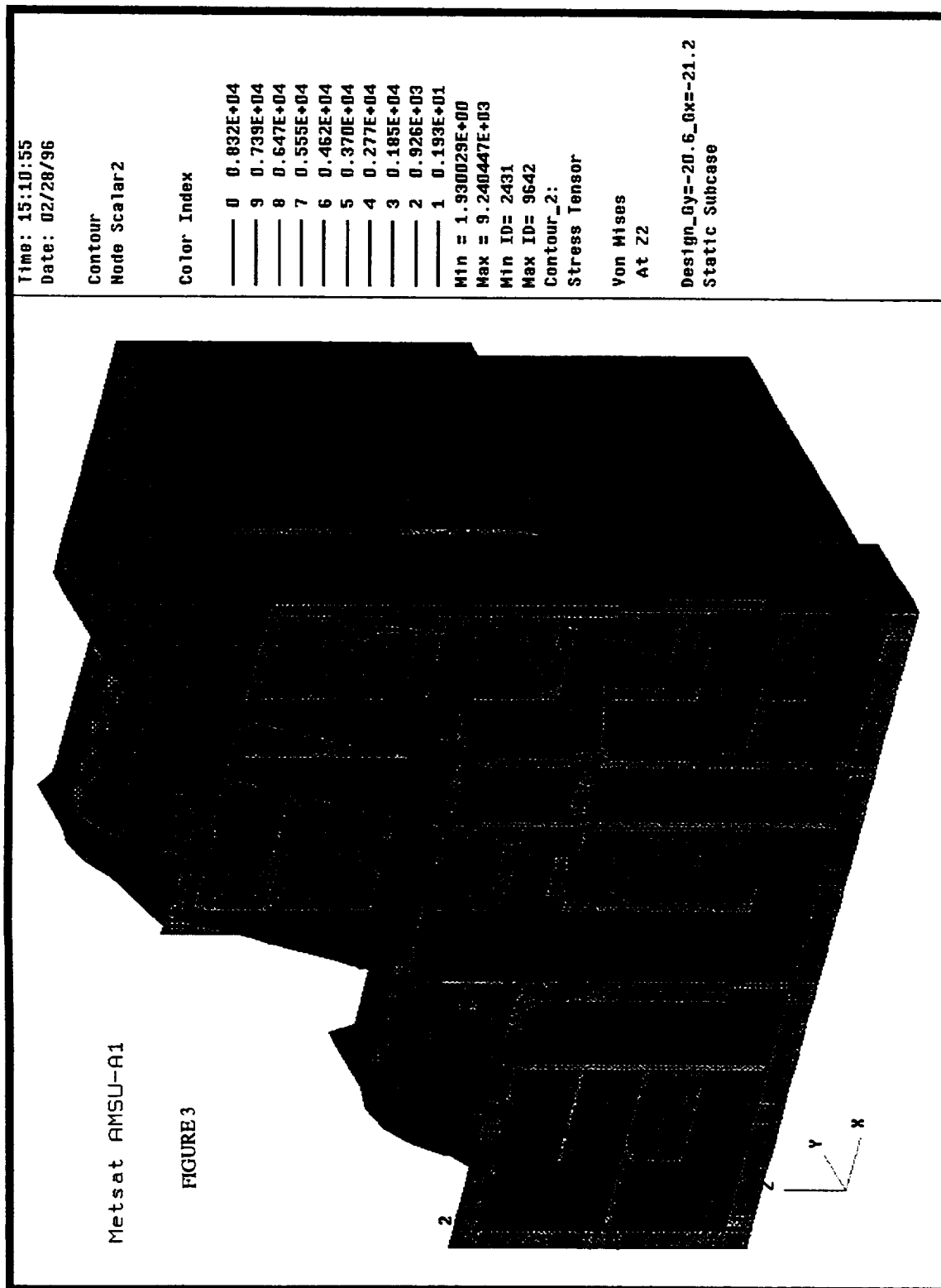


Figure 3 METSAT AMSU-A1

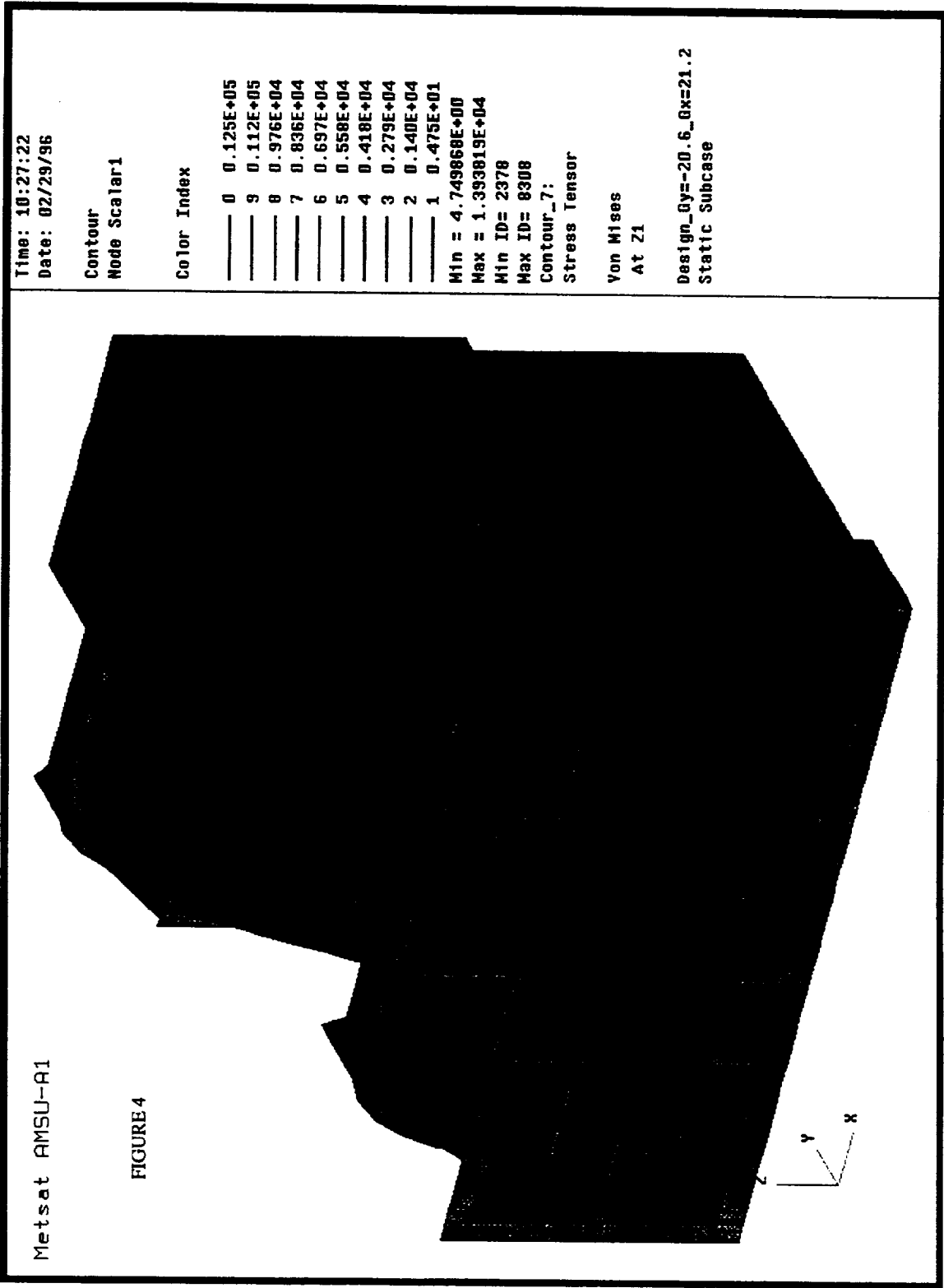


Figure 4 METSAT AMSU-A1

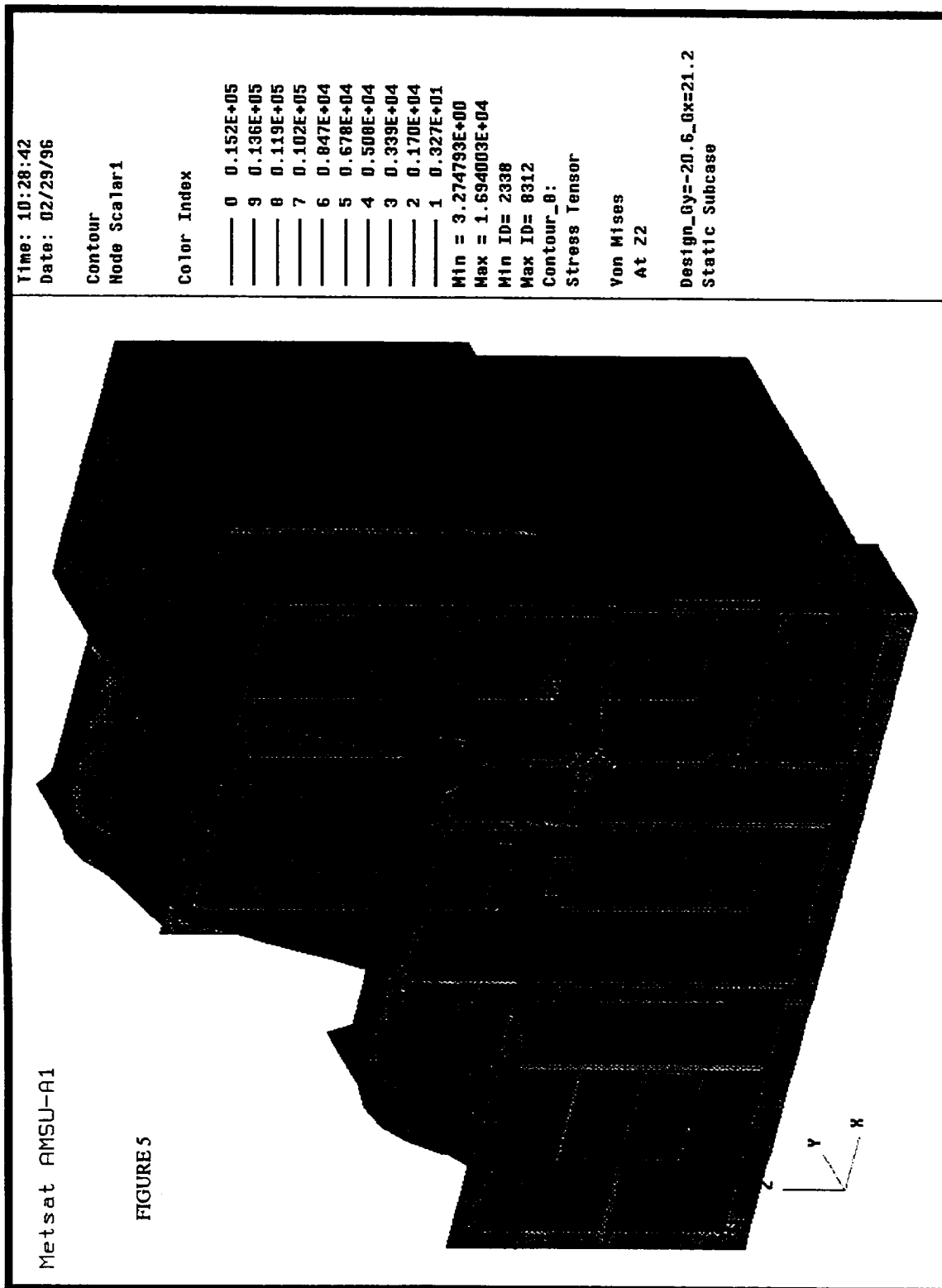


Figure 5 METSAT AMSU-A1

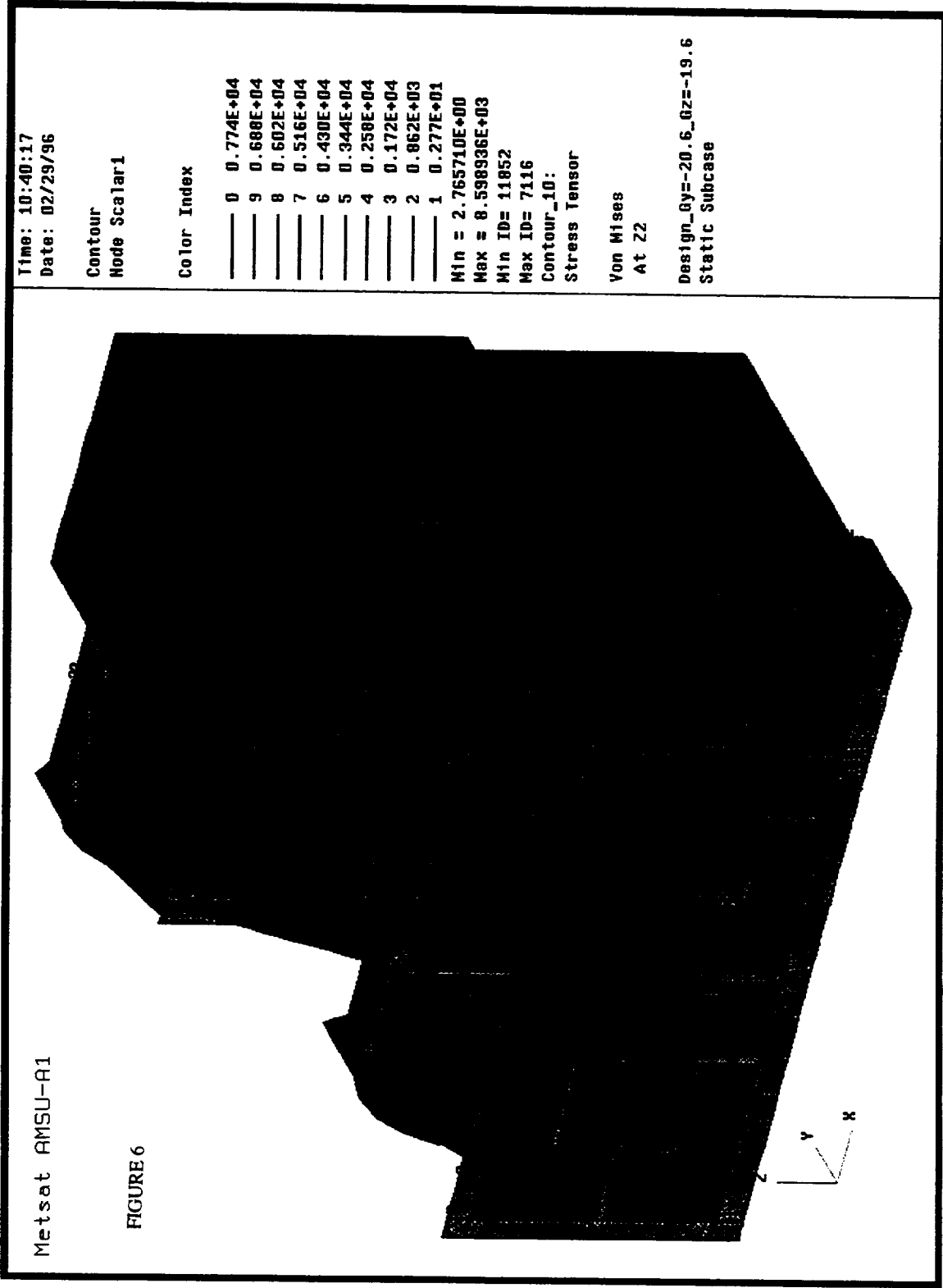


Figure 6 METSAT AMSU-A1

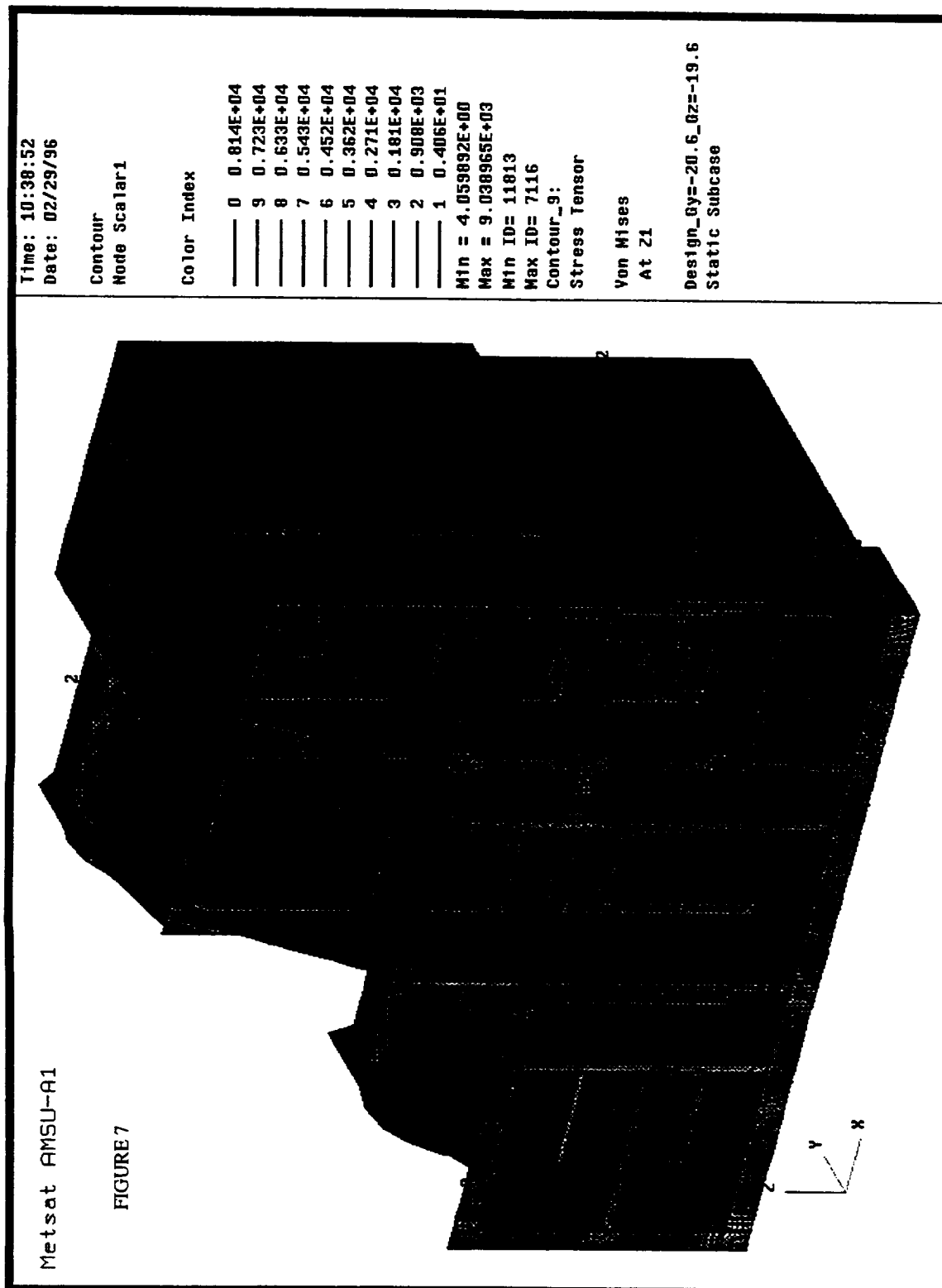


Figure 7 METSAT AMSU-A1

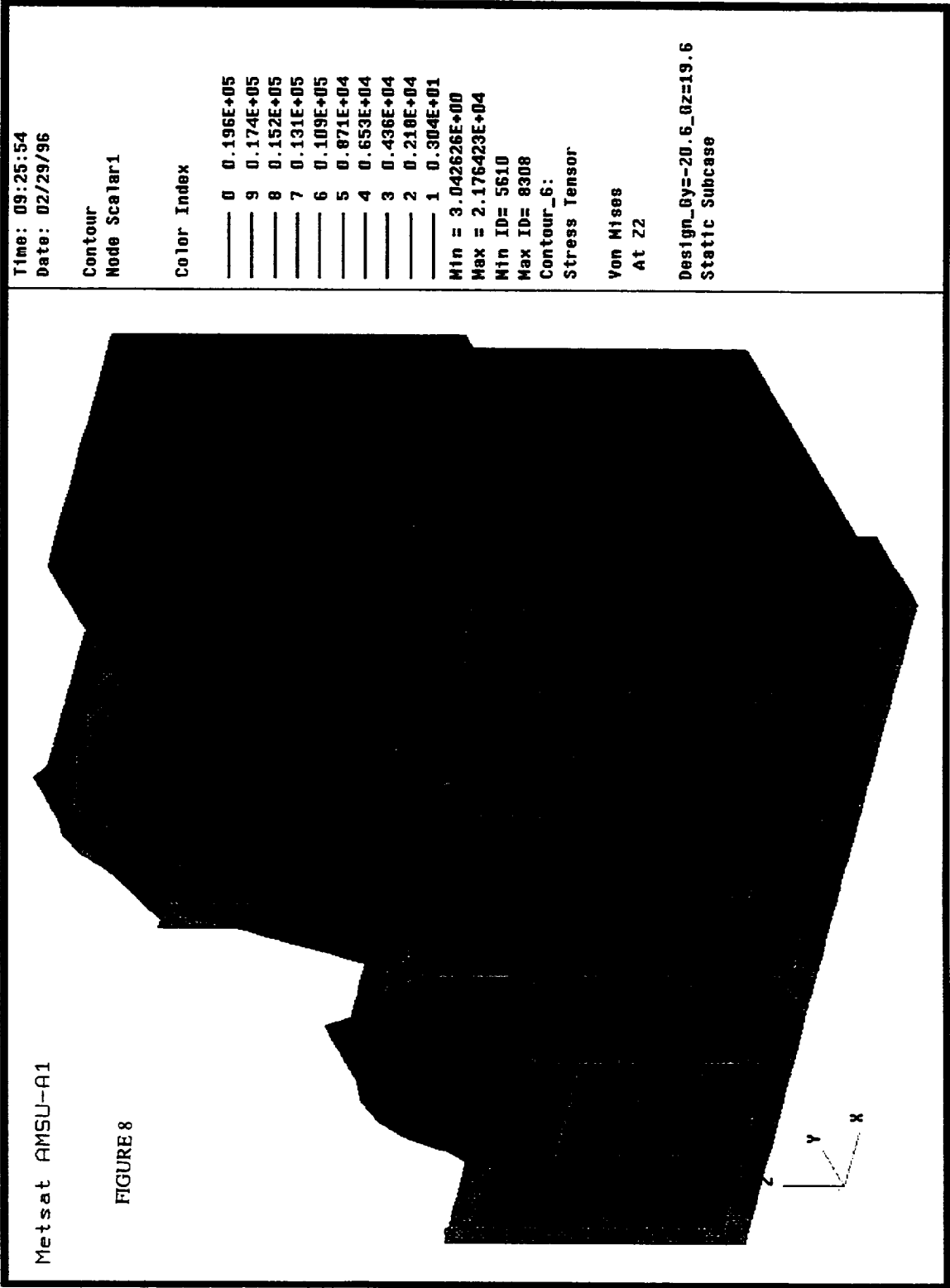


Figure 8 METSAT AMSU-A1

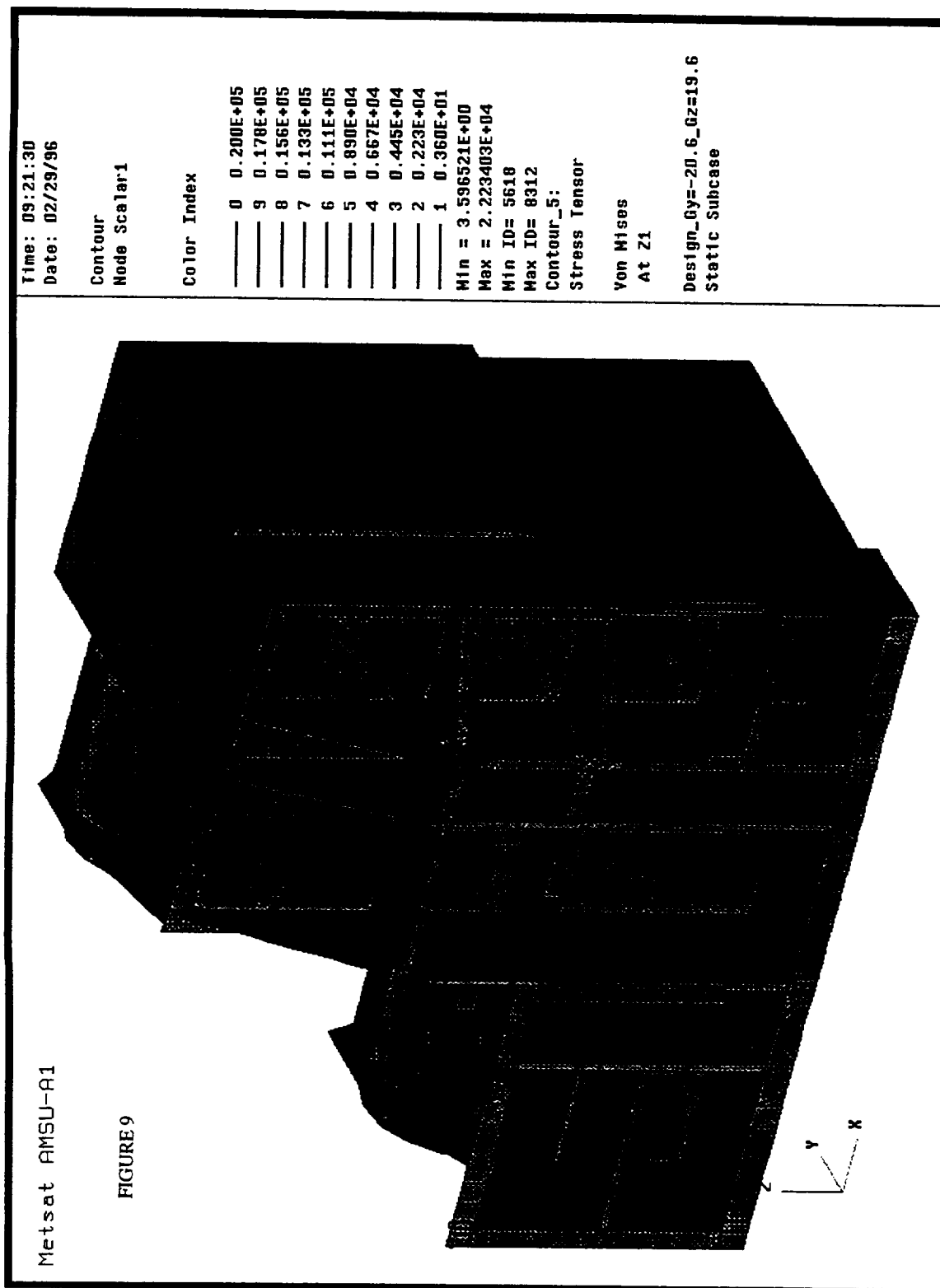


Figure 9 METSAT AMSU-A1

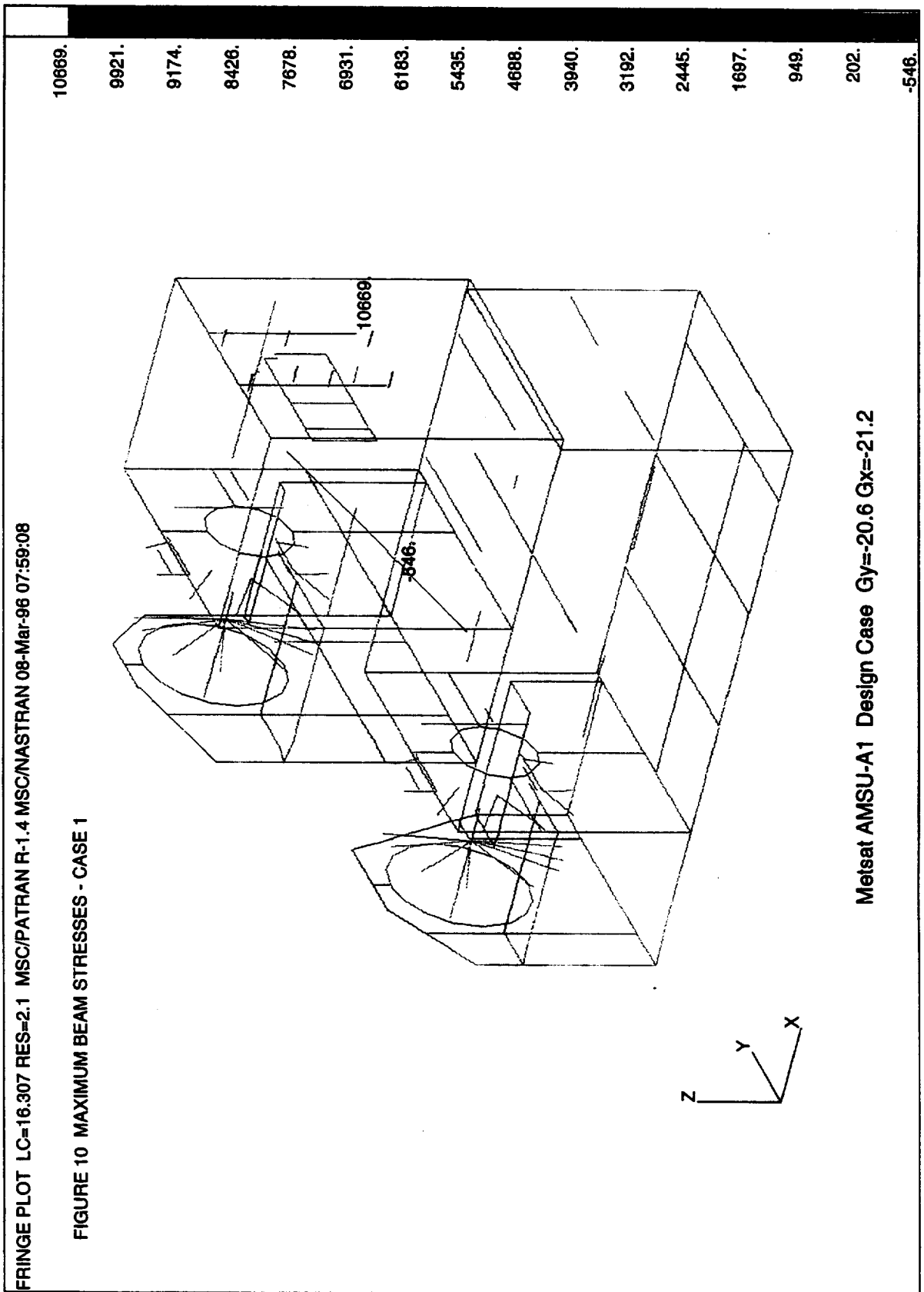


Figure 10 Maximum Beam Stresses - Case 1

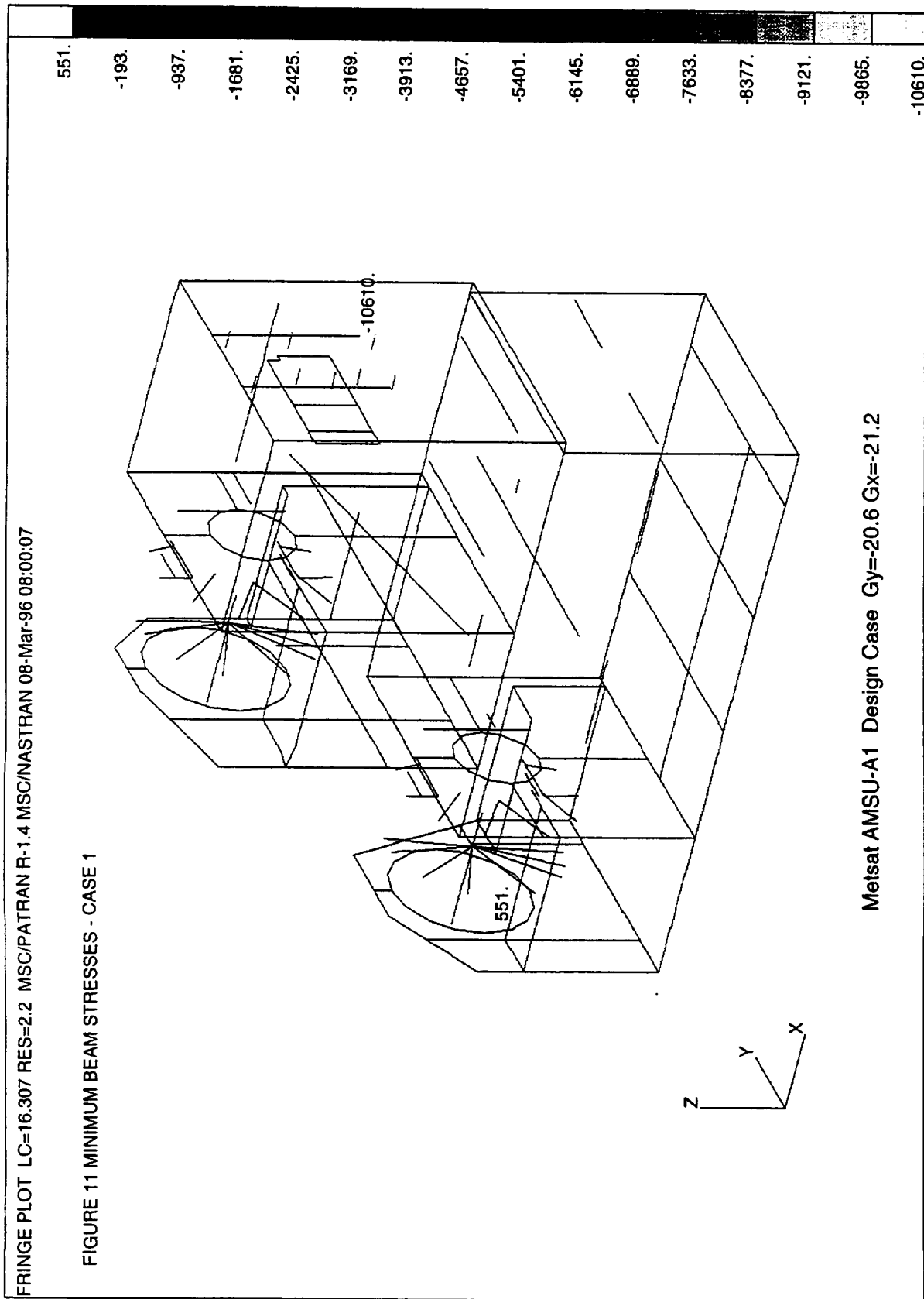


Figure 11 Minimum Beam Stresses - Case 1

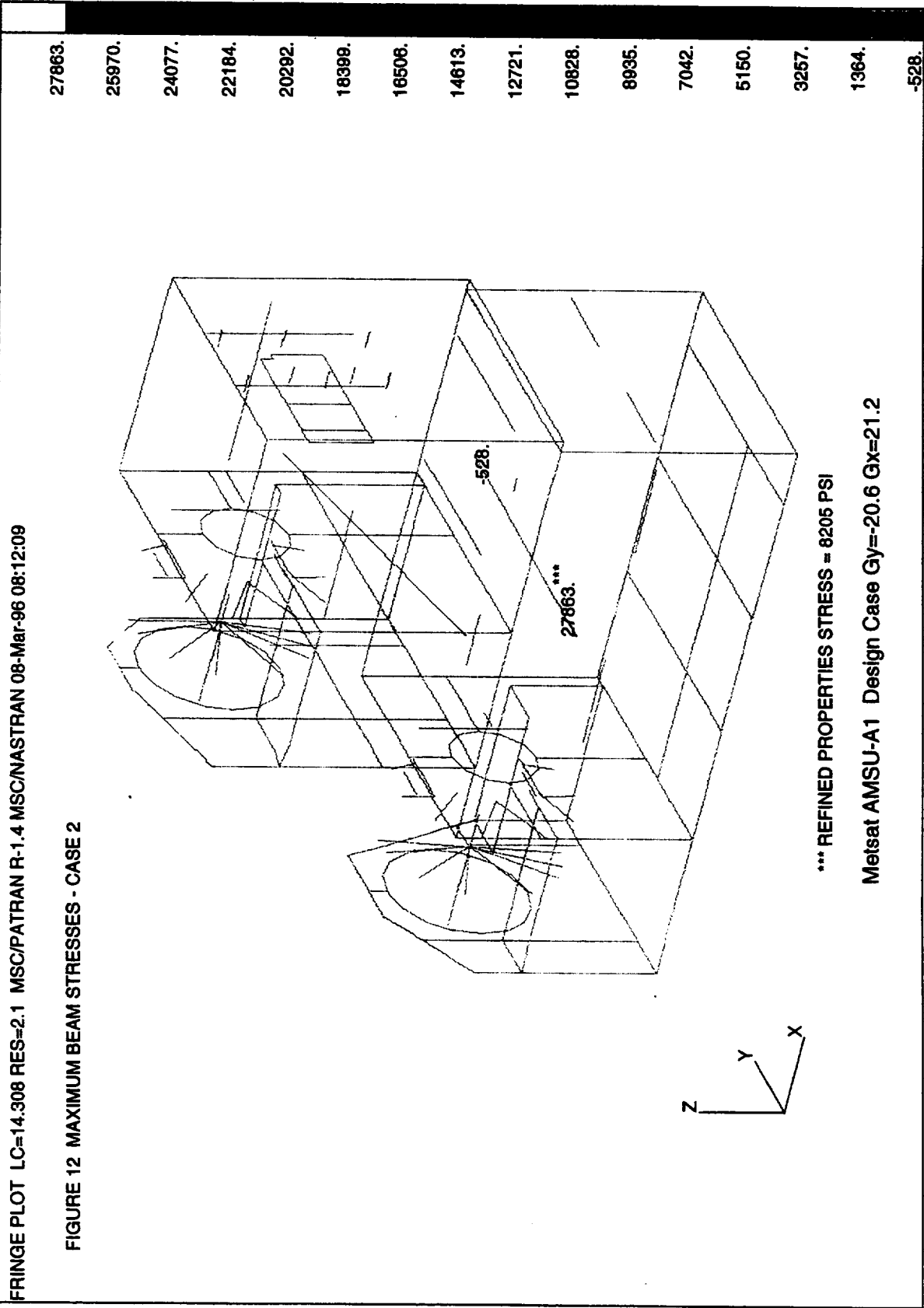


Figure 12 Maximum Beam Stresses - Case 2

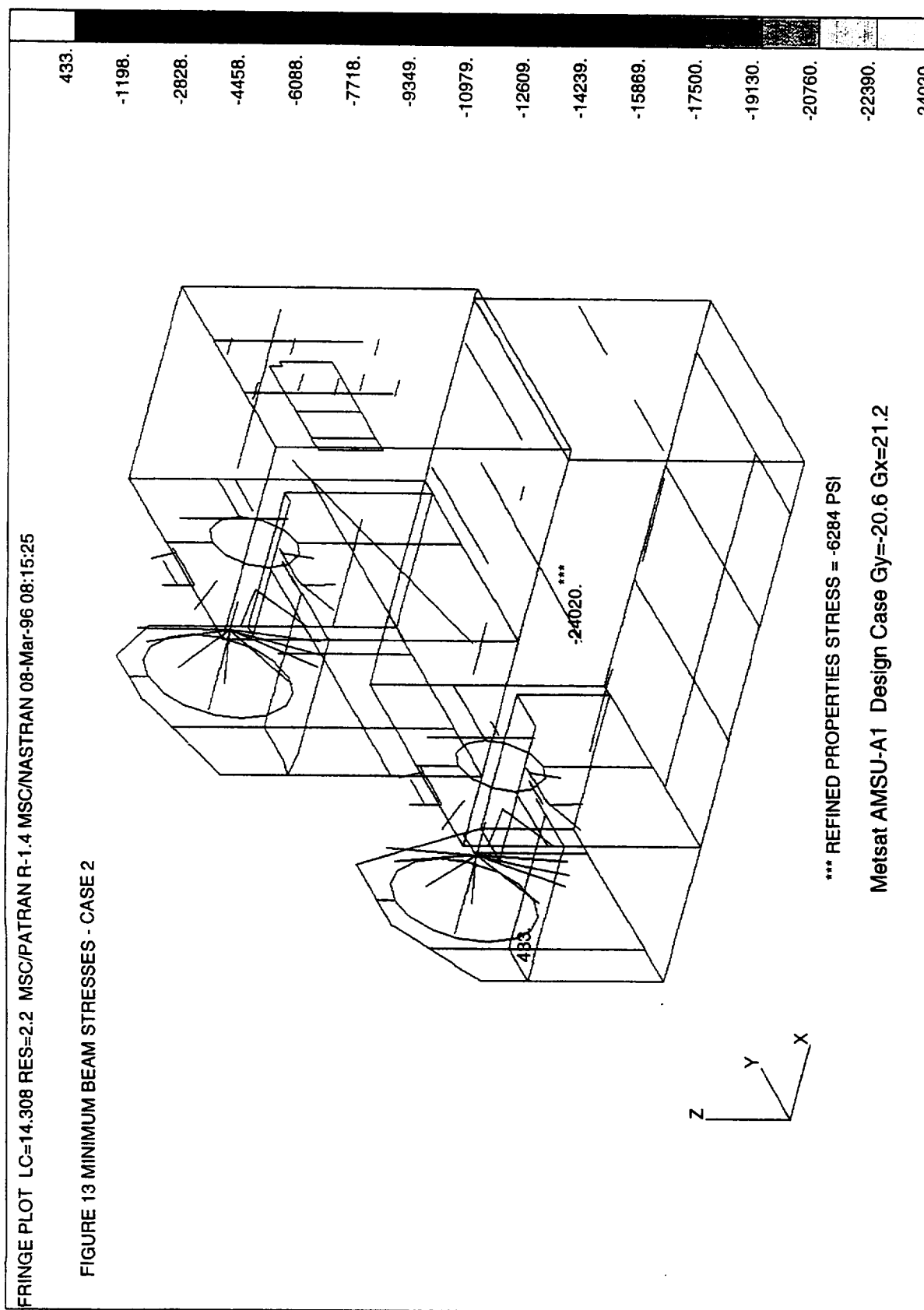


Figure 13 Minimum Beam Stresses - Case 2

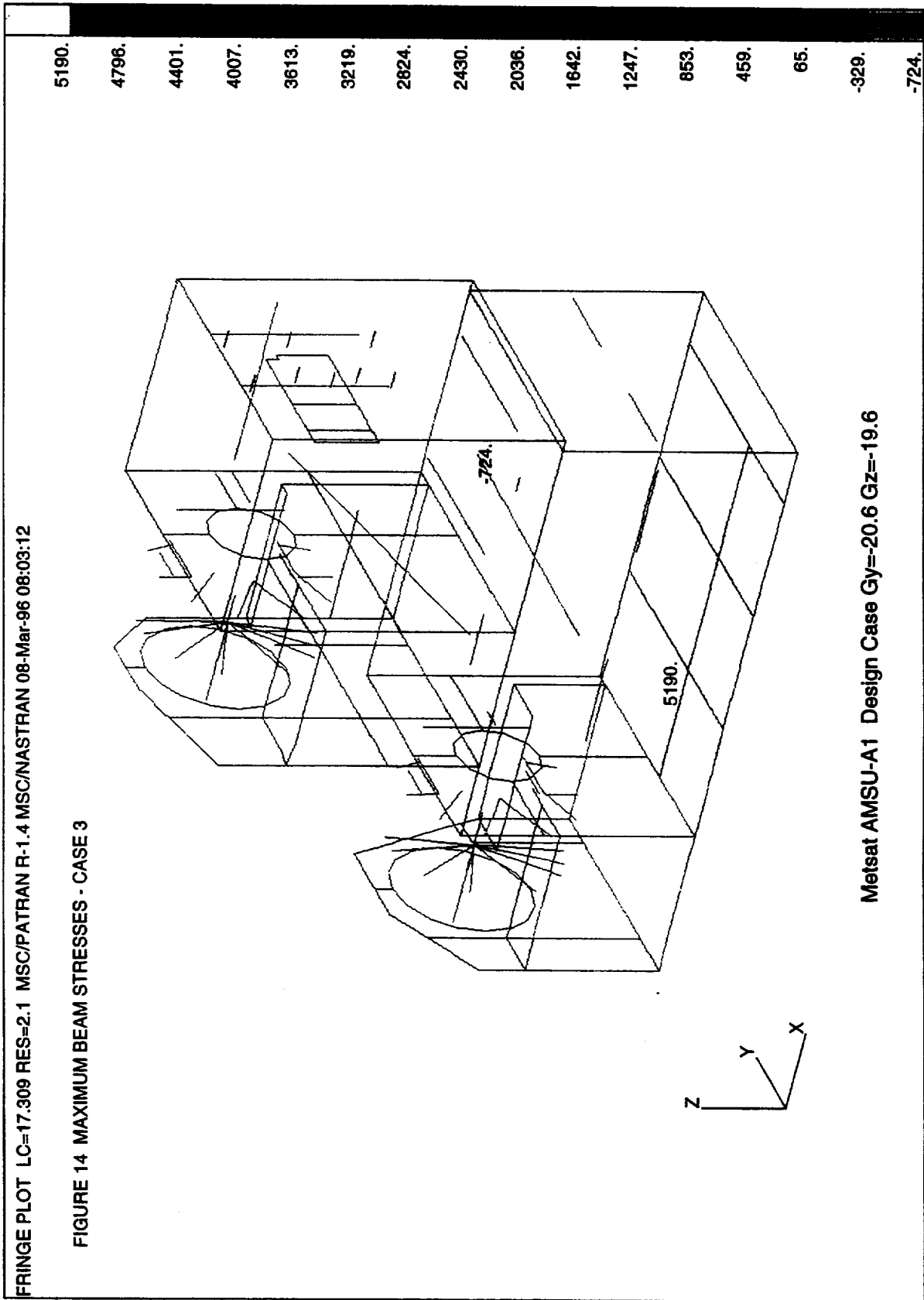


Figure 14 Maximum Beam Stresses - Case 3

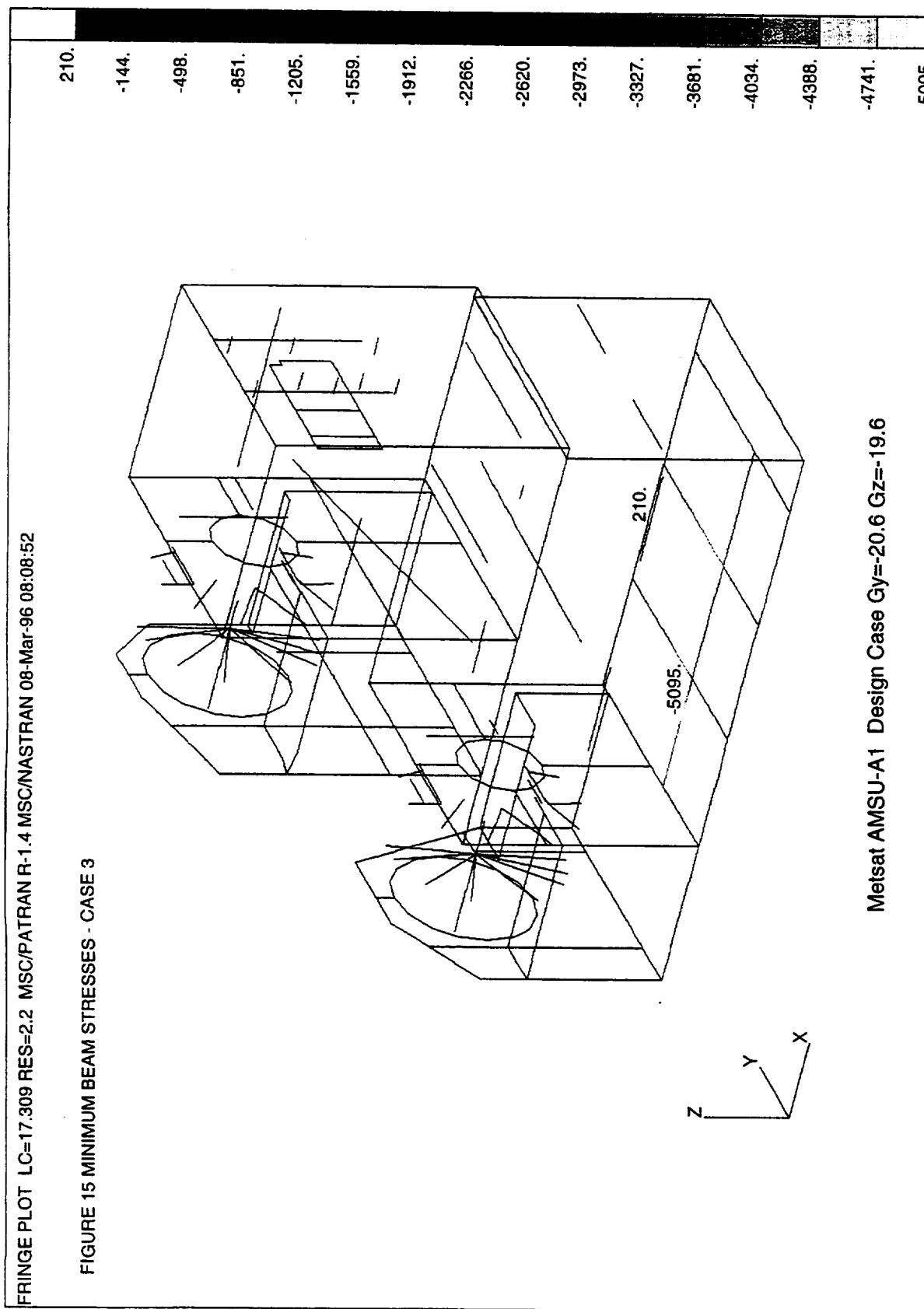


Figure 15 Minimum Beam Stresses - Case 3

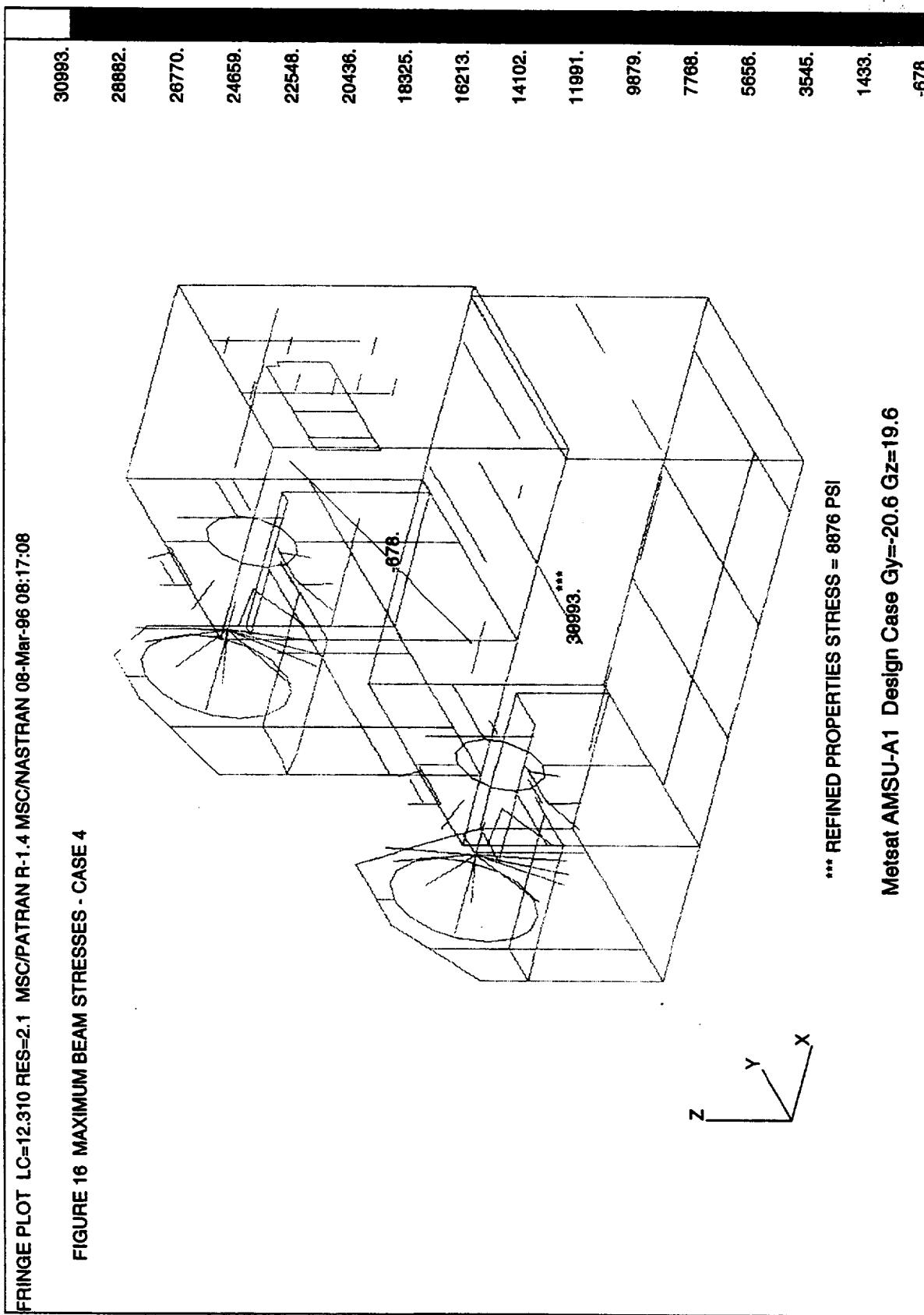


Figure 16 Maximum Beam Stresses - Case 4

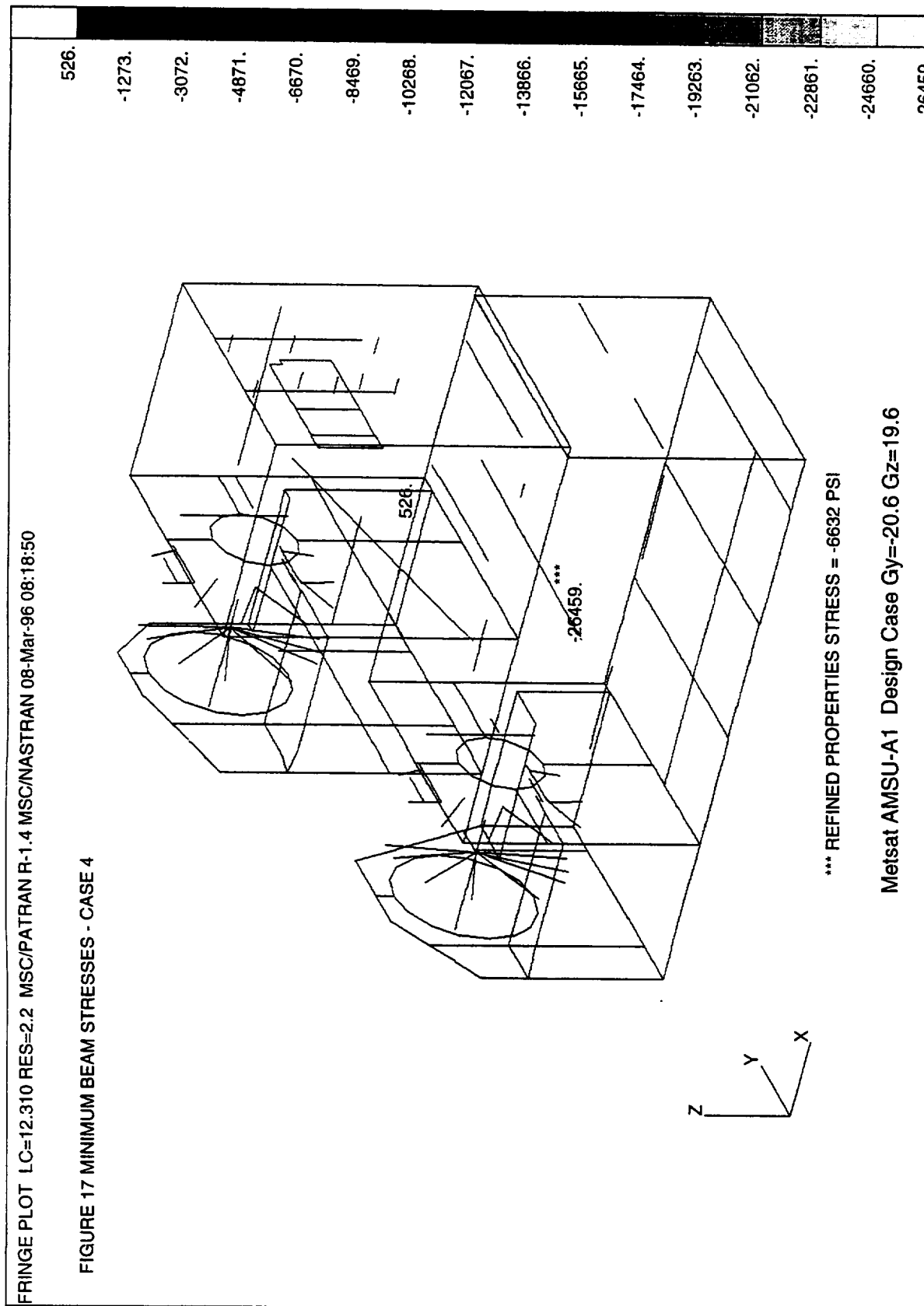


Figure 17 Minimum Beam Stresses - Case 4

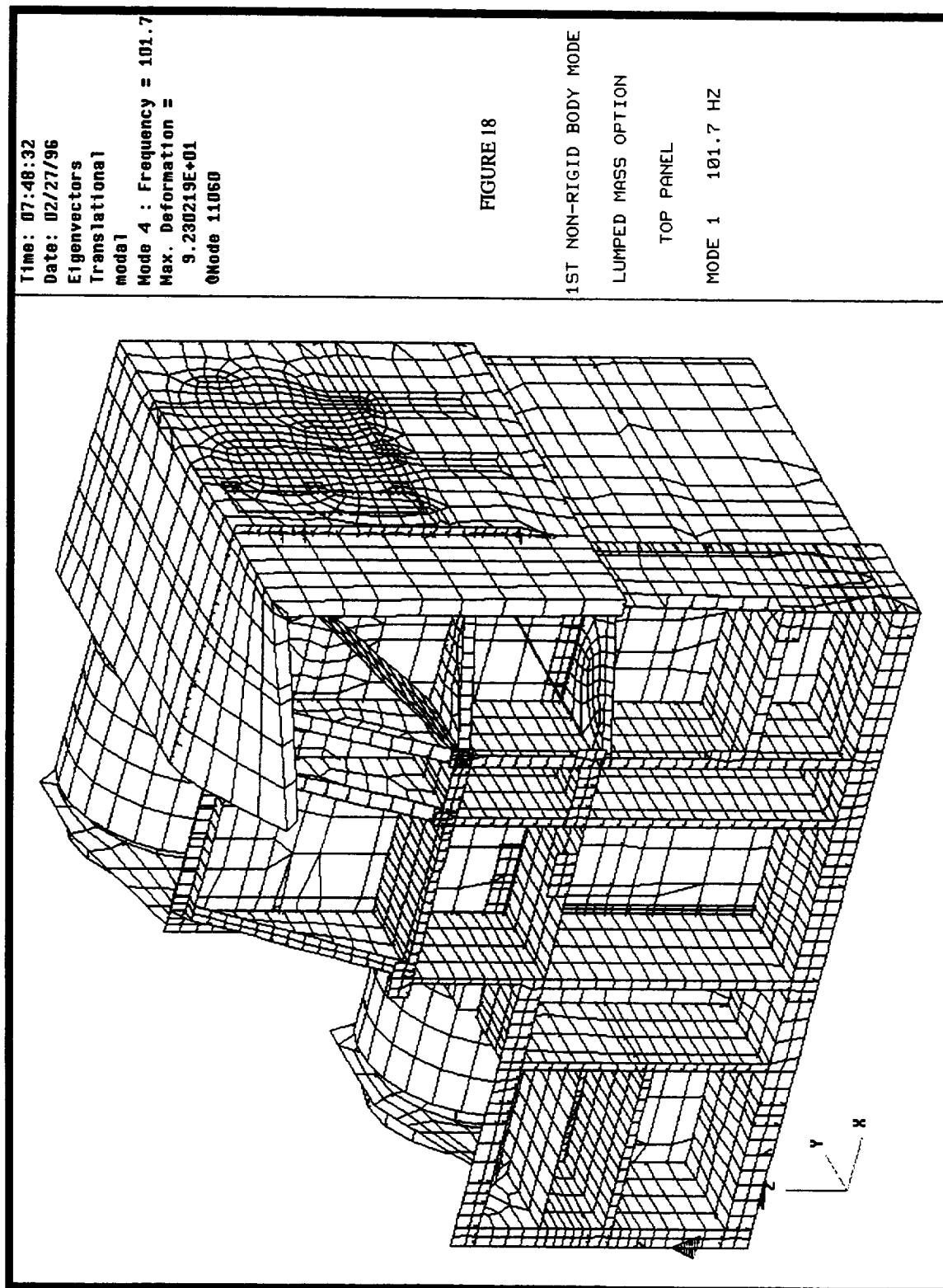


Figure 18 1st Non-rigid Body Mode Lumped Mass Option - Top Panel

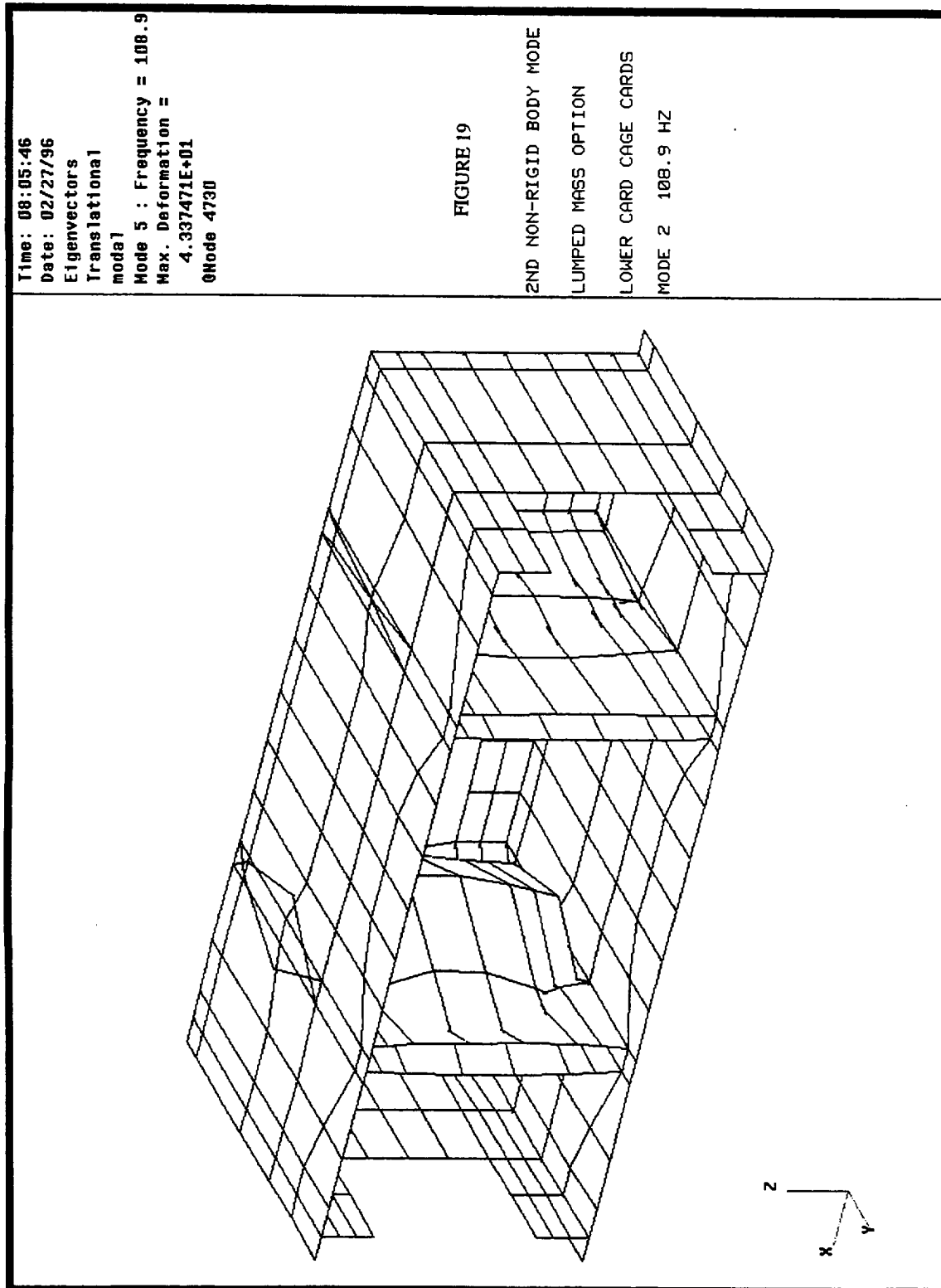


Figure 19 2nd Non-Rigid Body Mode Lumped Mass Option - Lower Card Cage Cards

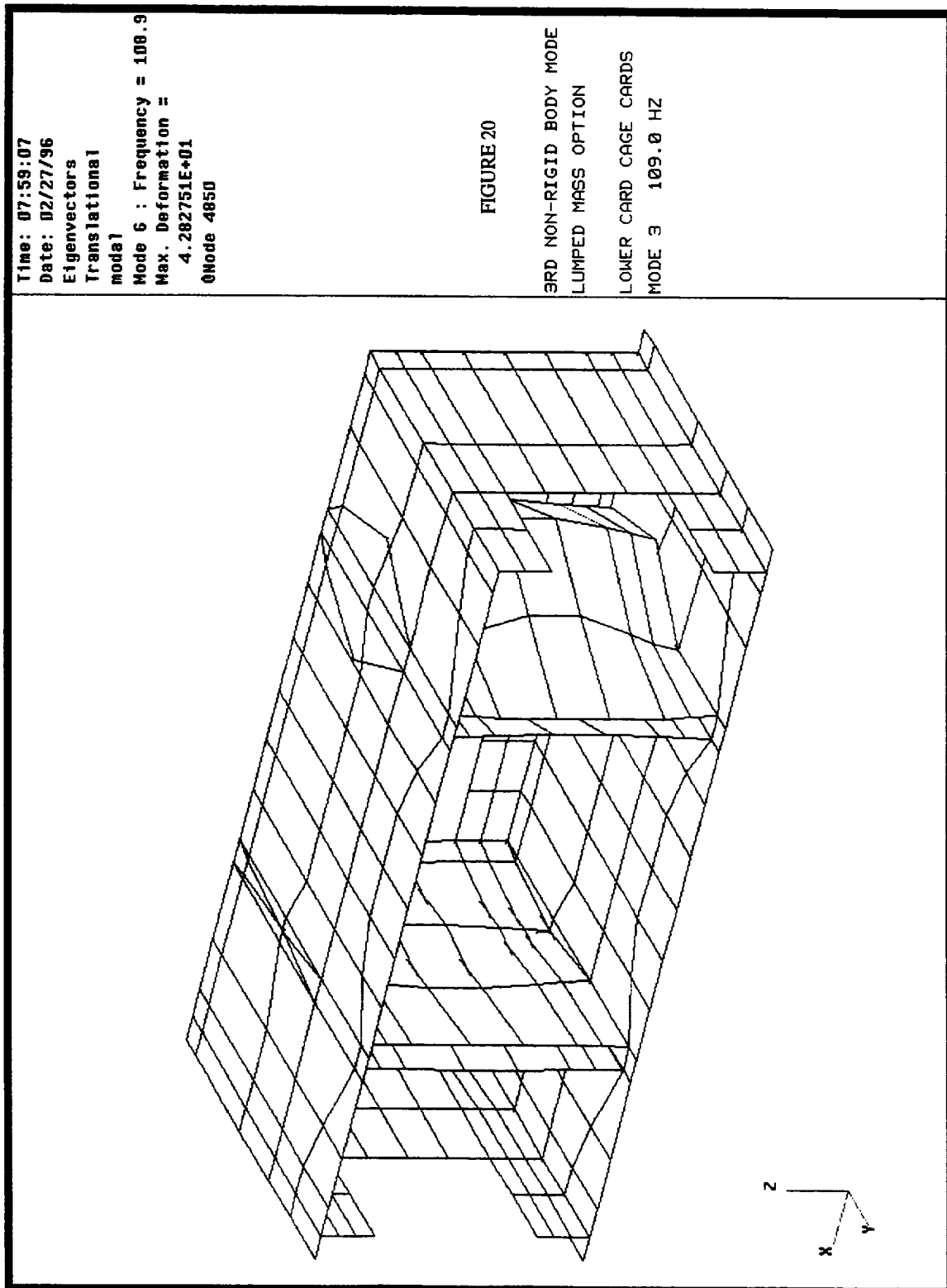


Figure 20 3rd Non-Rigid Body Mode Lumped Mass Option - Lower Card Cage Cards

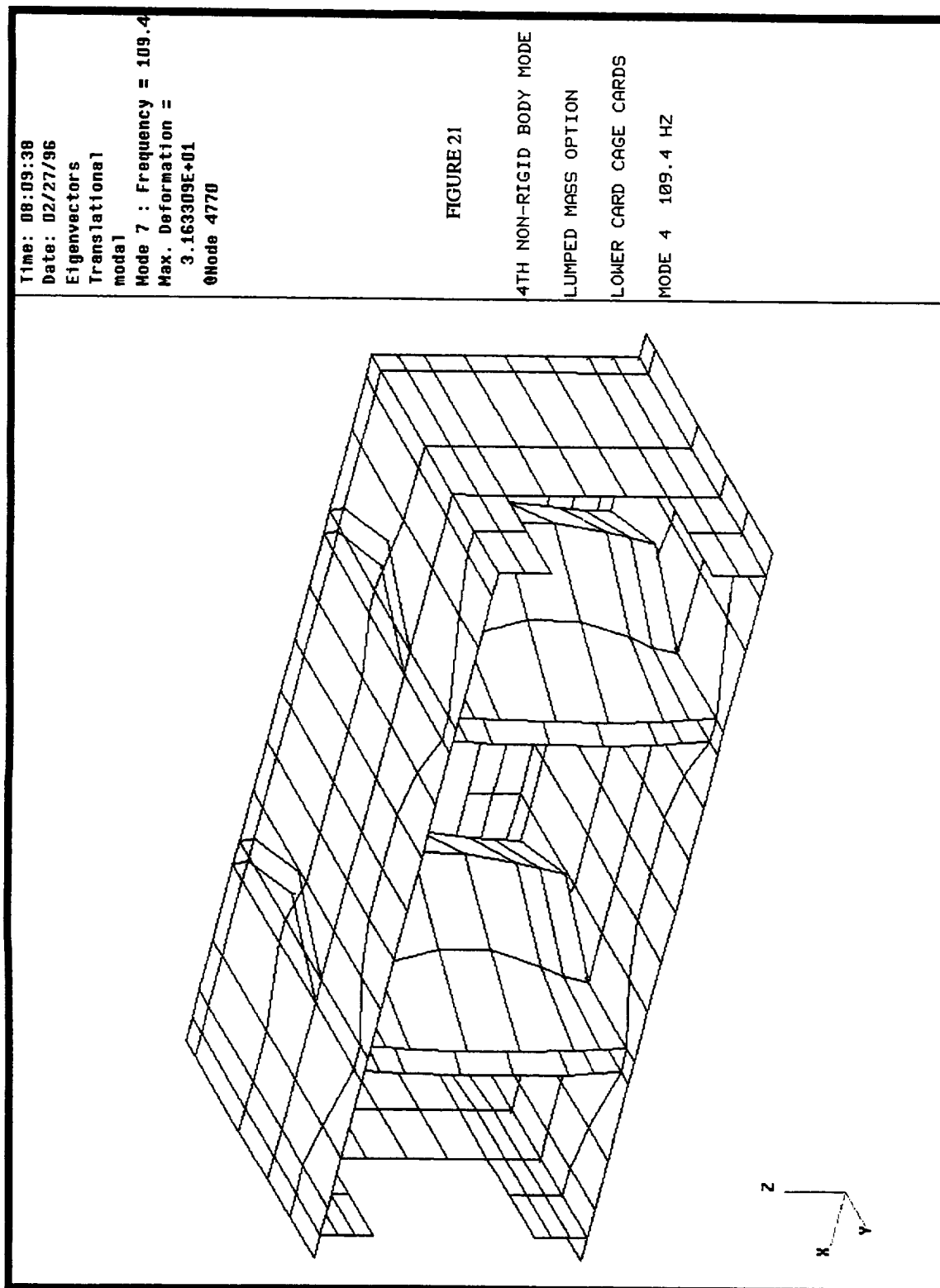


Figure 21 4th Non-Rigid Body Mode Lumped Mass Option - Lower Card Cage Cards

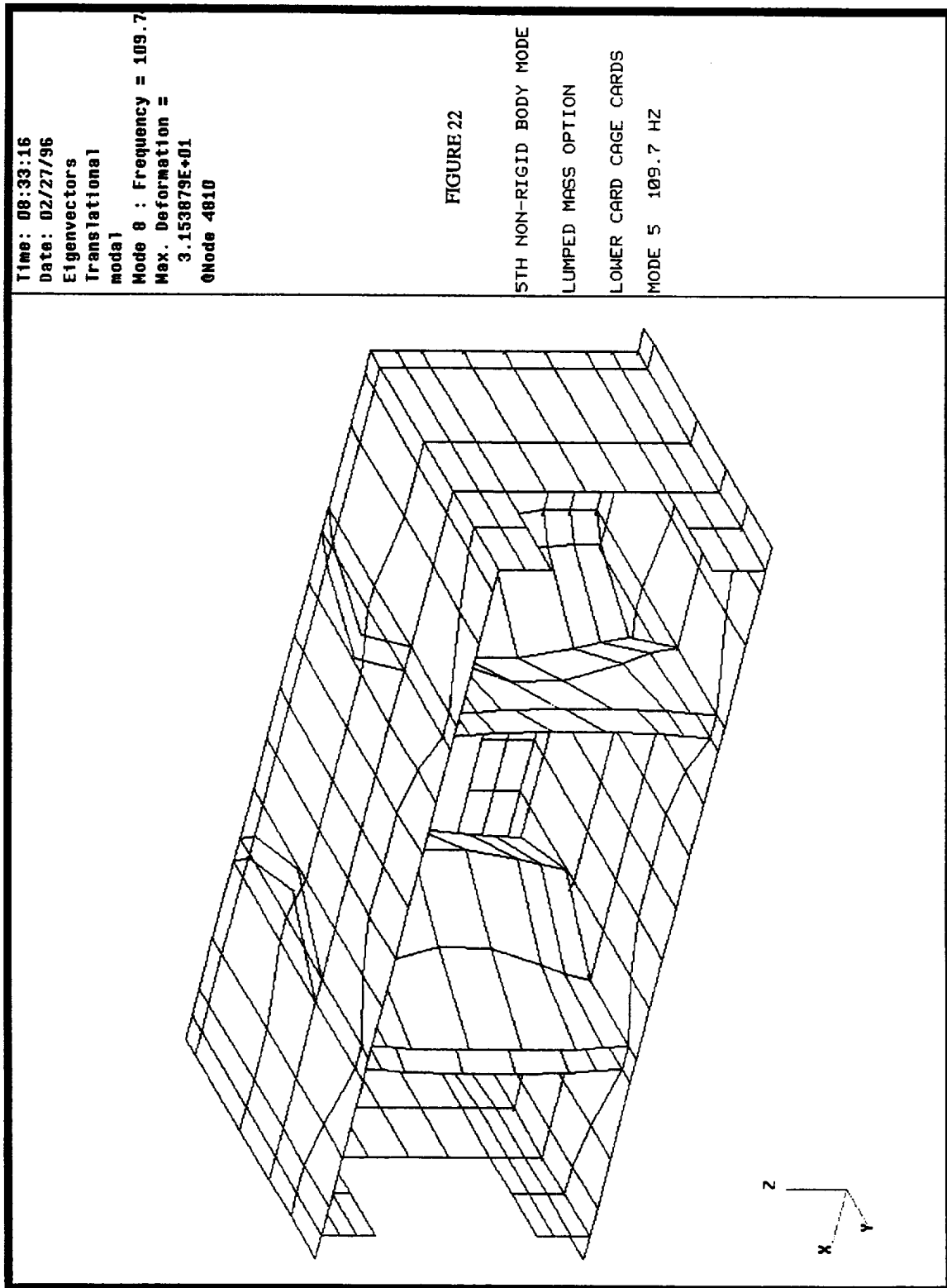


Figure 22 5th Non-Rigid Body Mode Lumped Mass Option - Lower Card Cage Cards

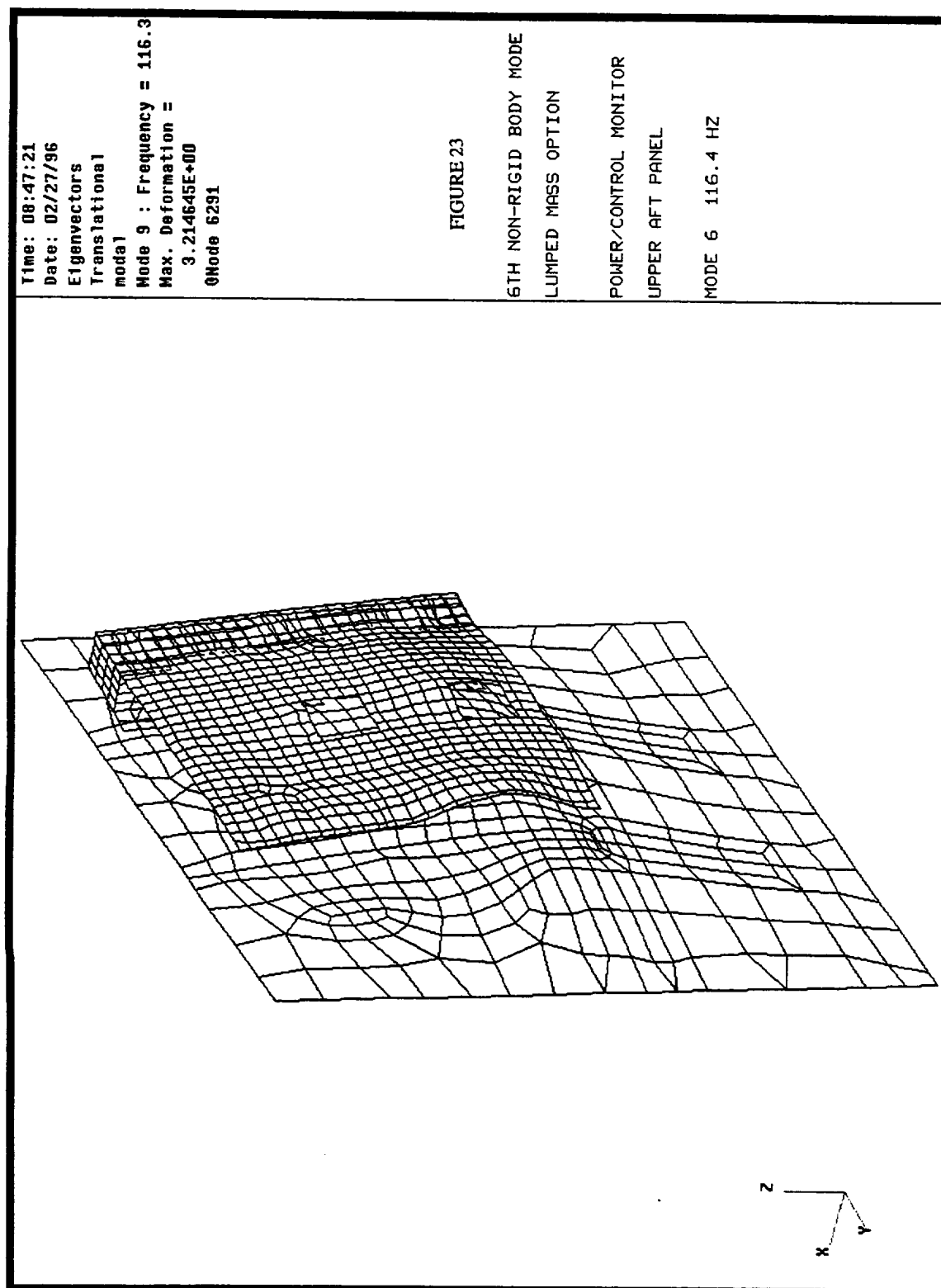


Figure 23 6th Non-Rigid Body Mode Lumped Mass Option - Power/Control Monitor - Upper Aft Panel

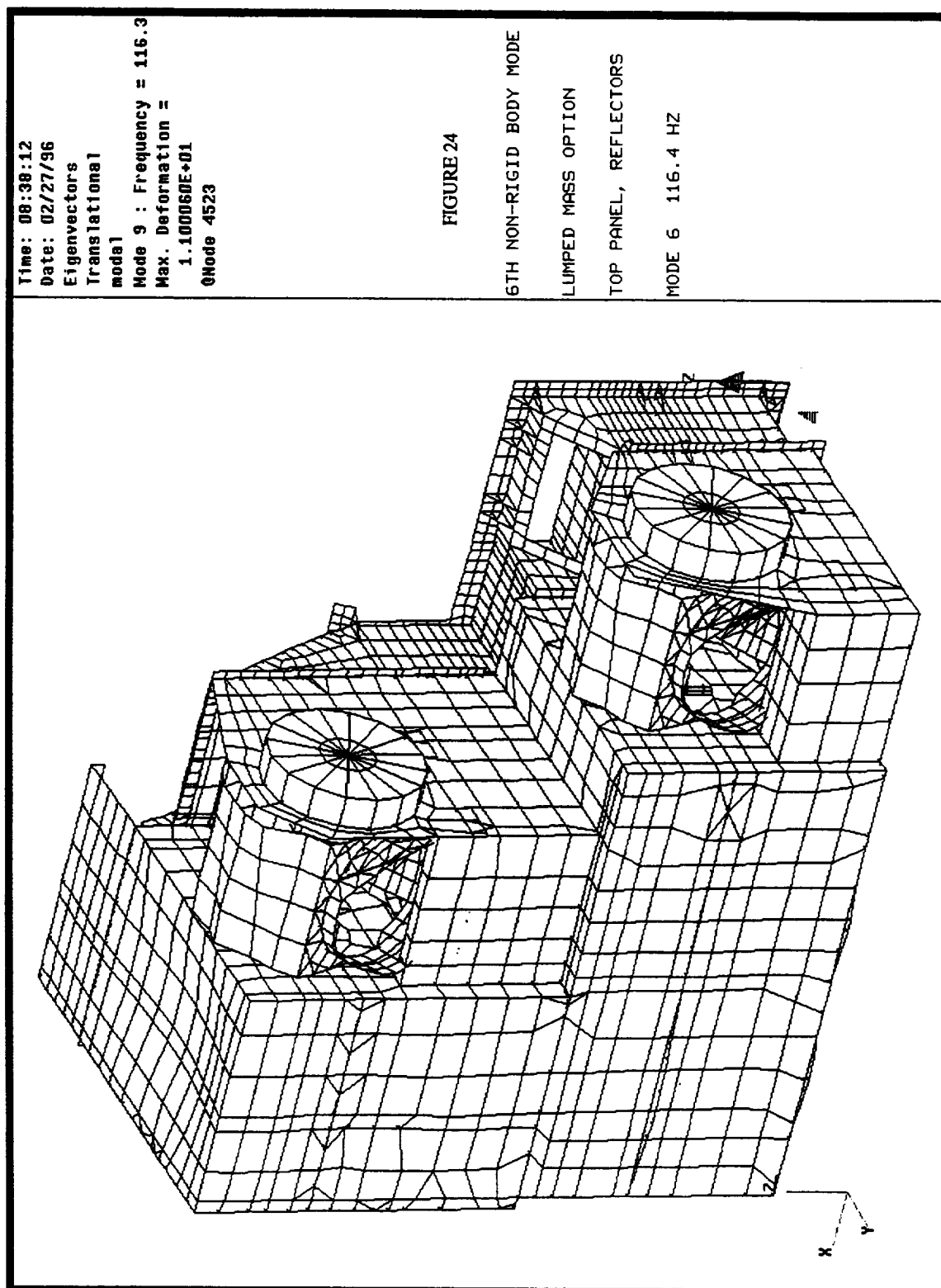


Figure 24 6th Non-Rigid Body Mode Lumped Mass Option - Top Panel, Reflectors

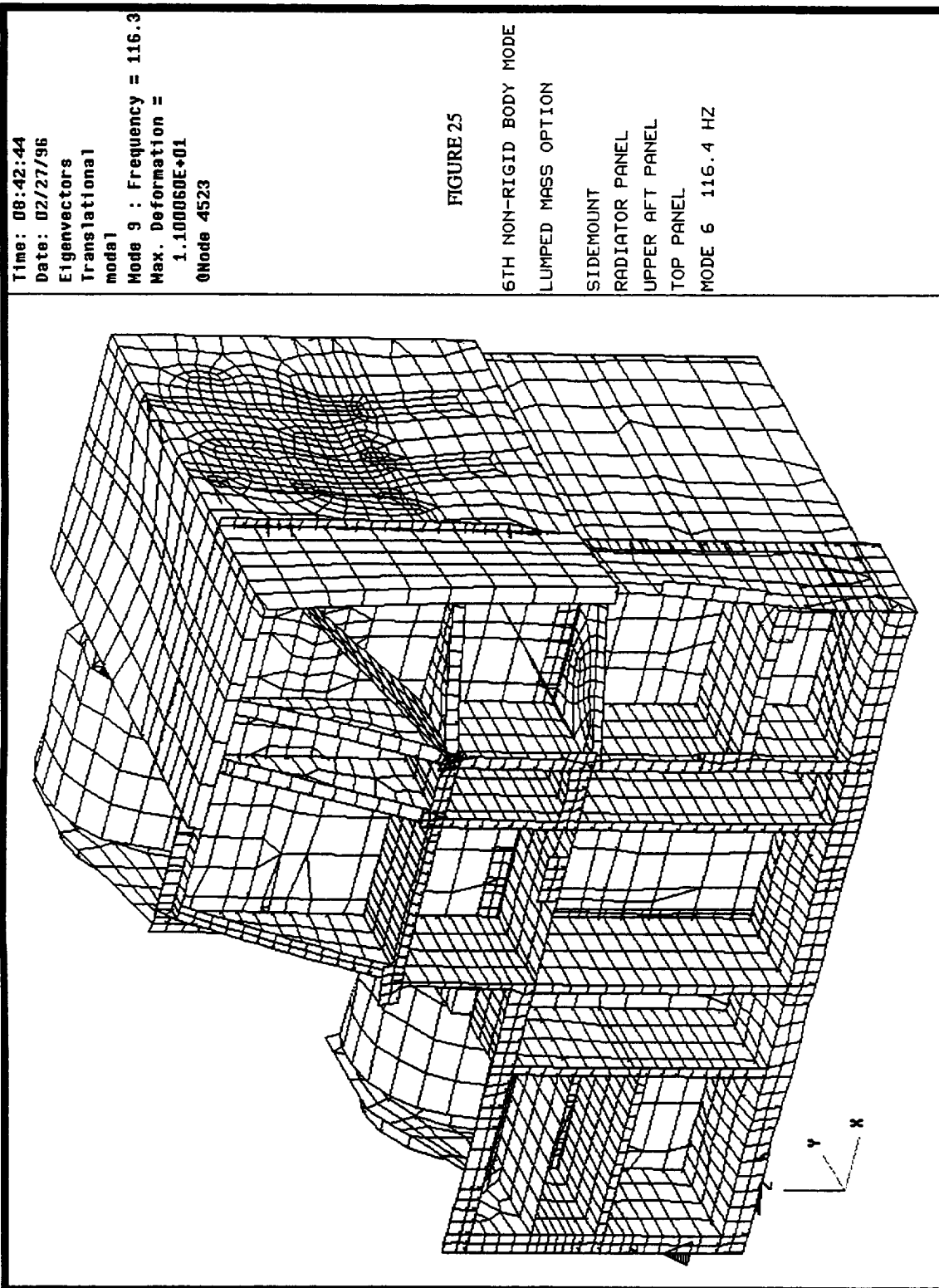


Figure 25 6th Non-Rigid Body Mode Lumped Mass Option - Sidemount Radiator Panel,
Upper Aft Panel, Top Panel

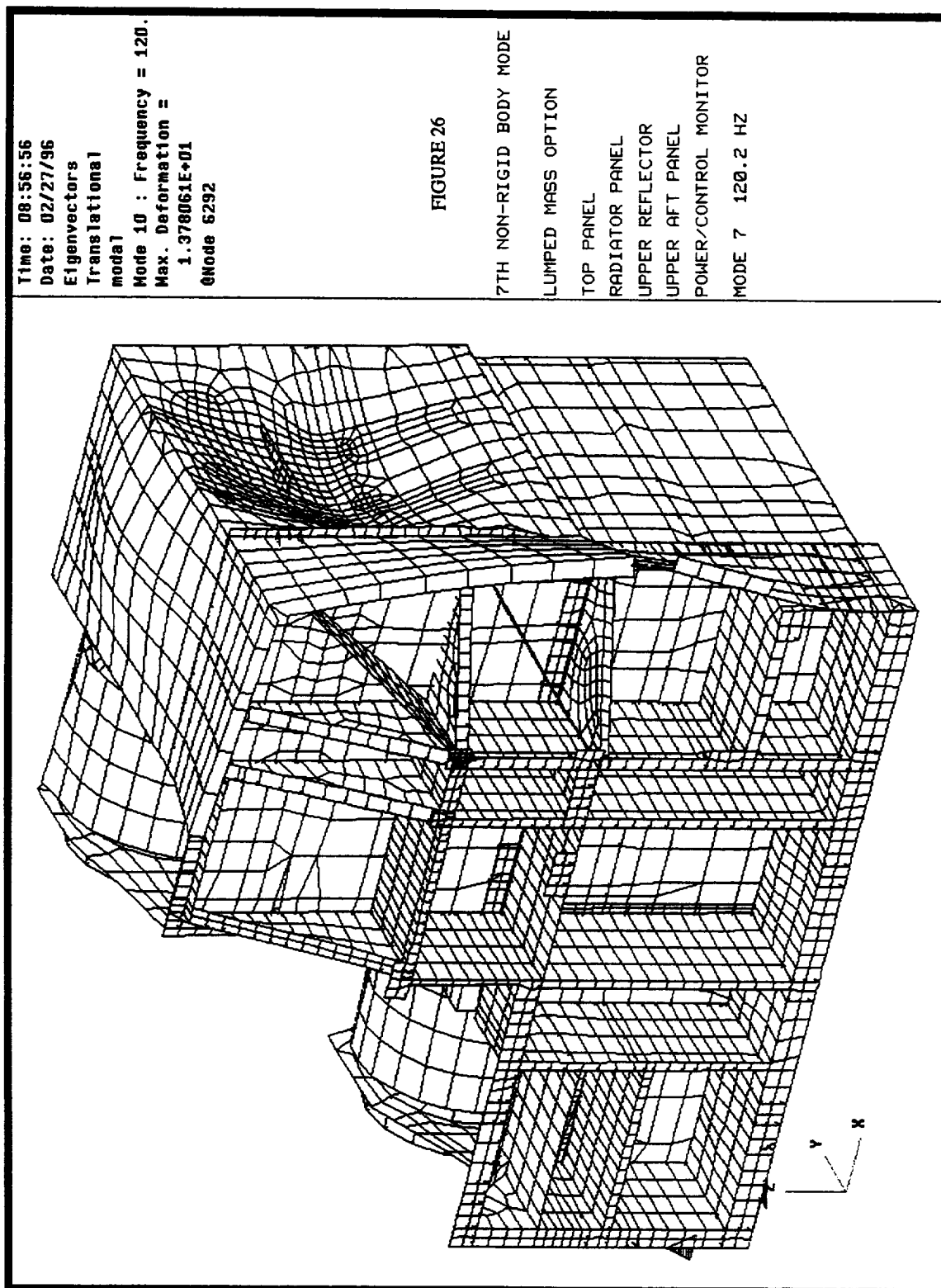


Figure 26 7th Non-Rigid Body Mode Lumped Mass Option - Top Panel, Radiator Panel,
Upper Reflector, Upper Aft Panel, Power/Control Monitor

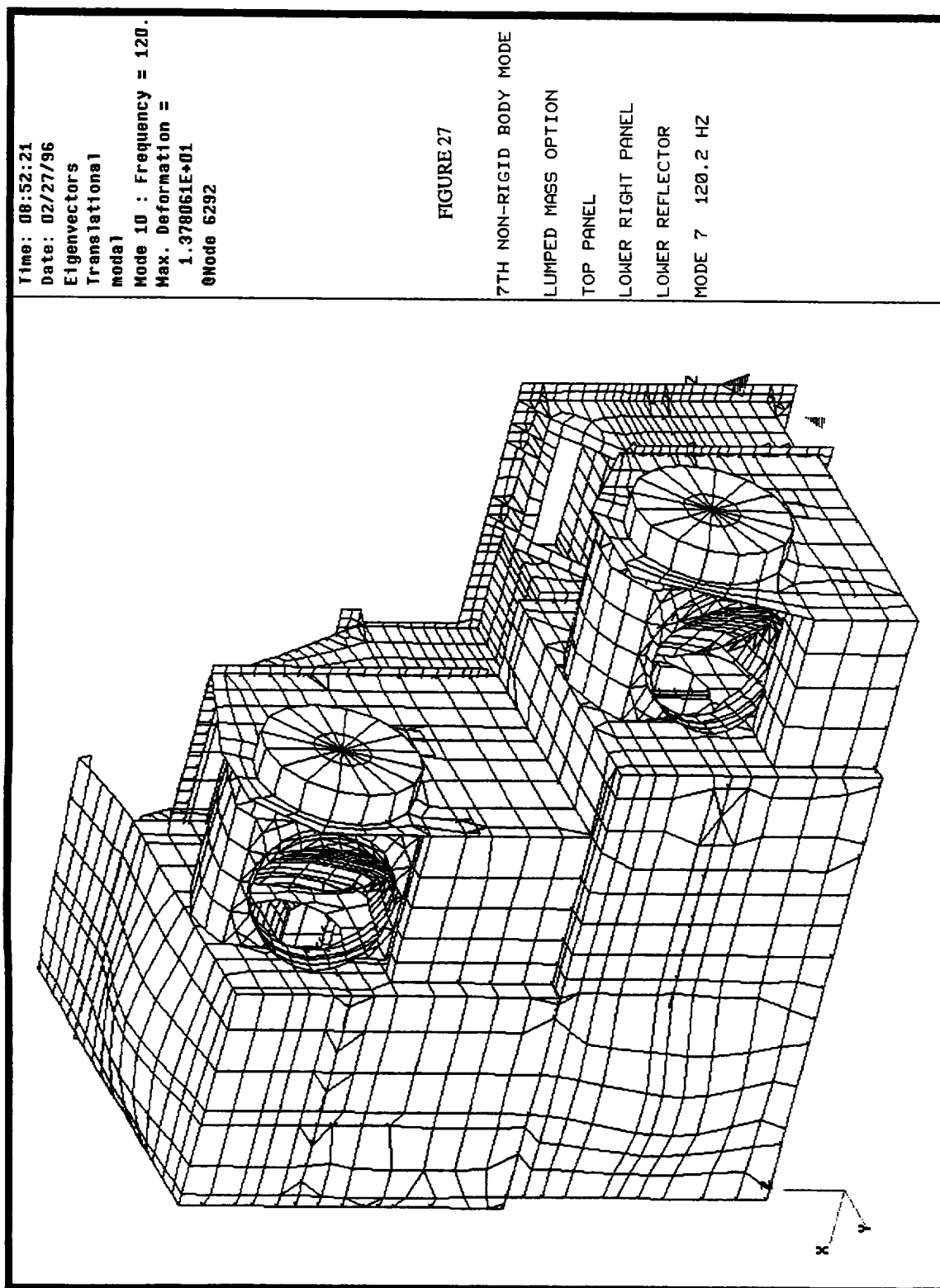


Figure 27 7th Non-Rigid Body Mode Lumped Mass Option - Top Panel, Lower Right Panel,
Lower Reflector

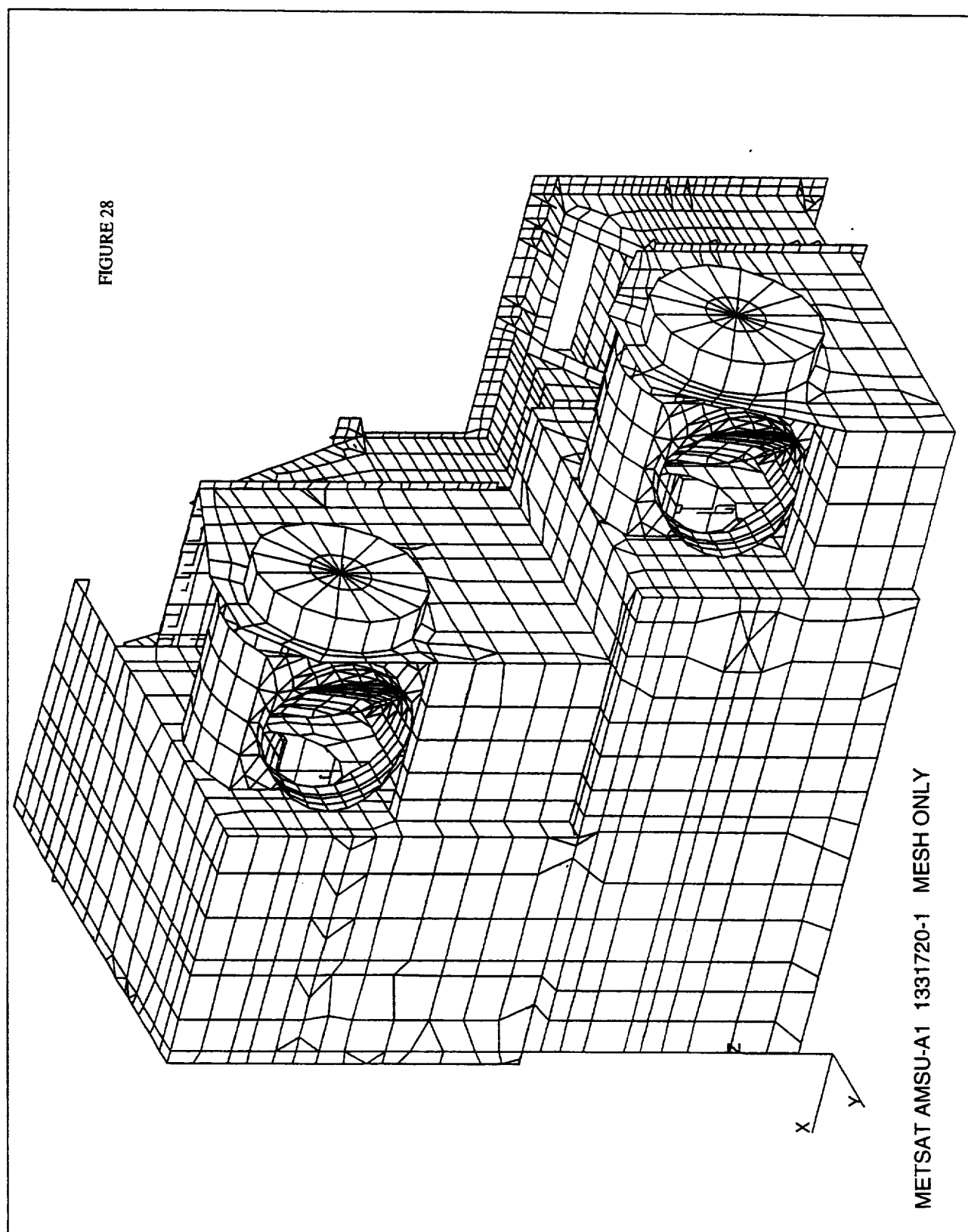


Figure 28 METSAT AMSU-A1 1331720-1 Mesh Only

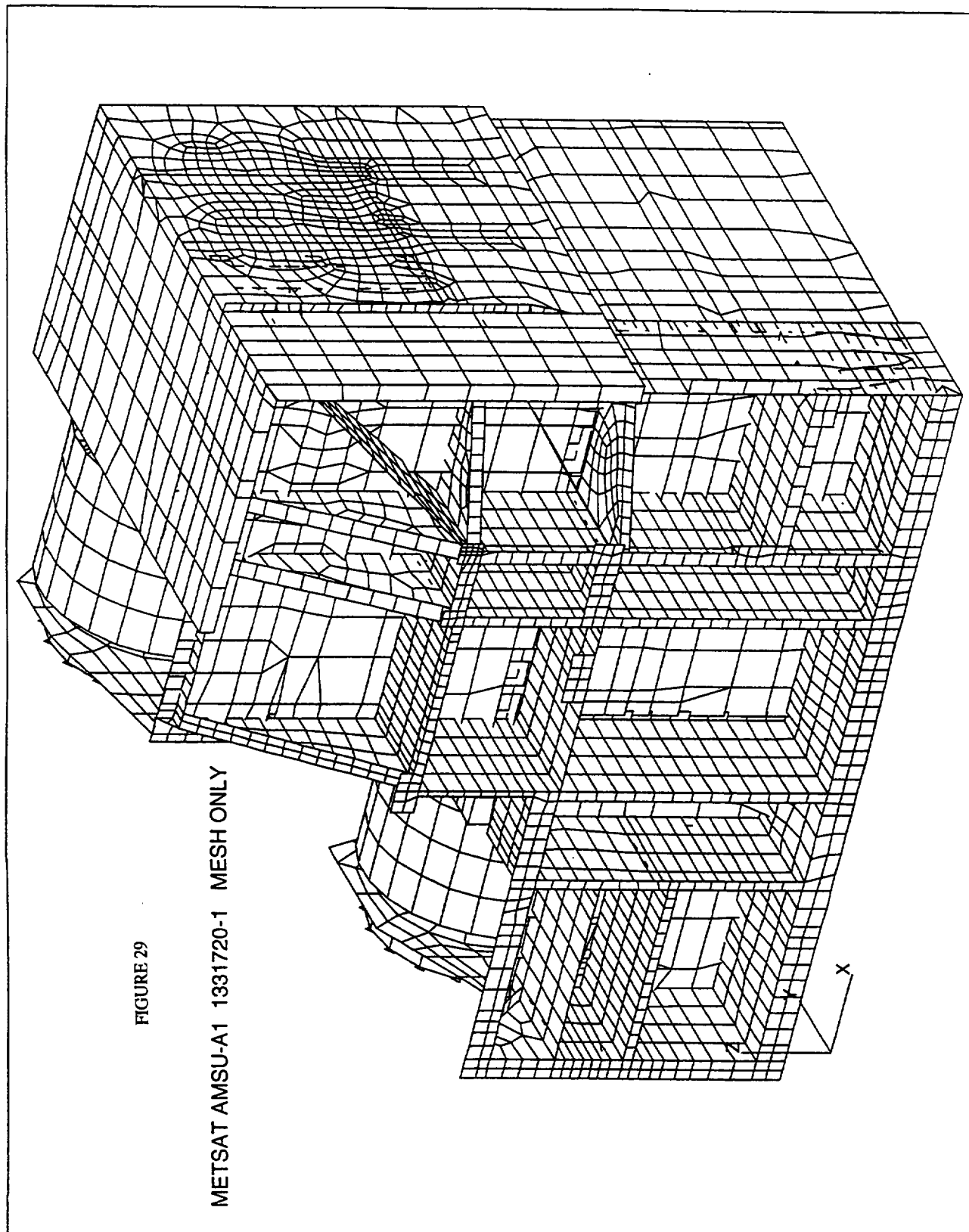


Figure 29 METSAT AMSU-A1 1331720-1 Mesh Only
103

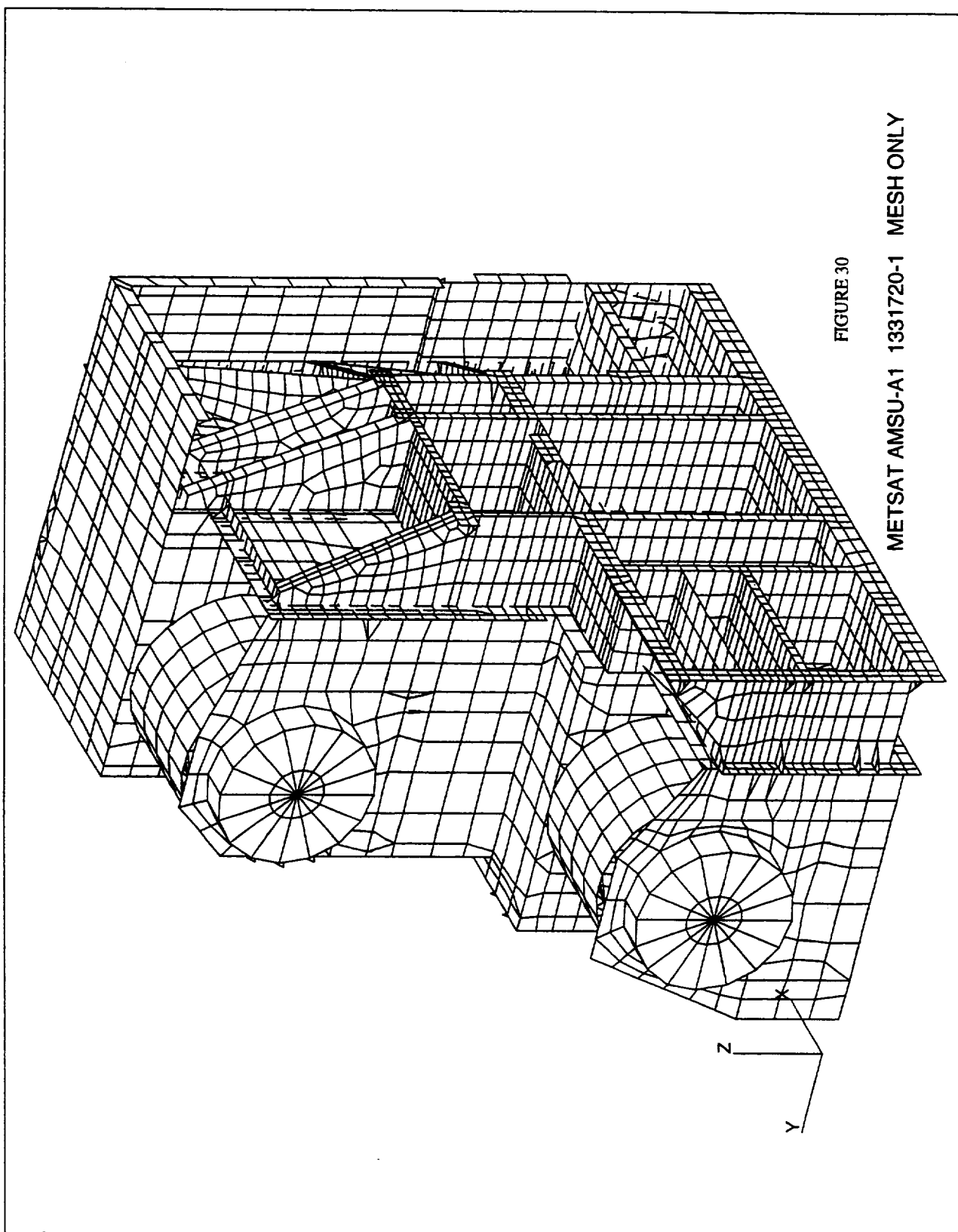


Figure 30 METSAT AMSU-1 1331720-1 Mesh Only

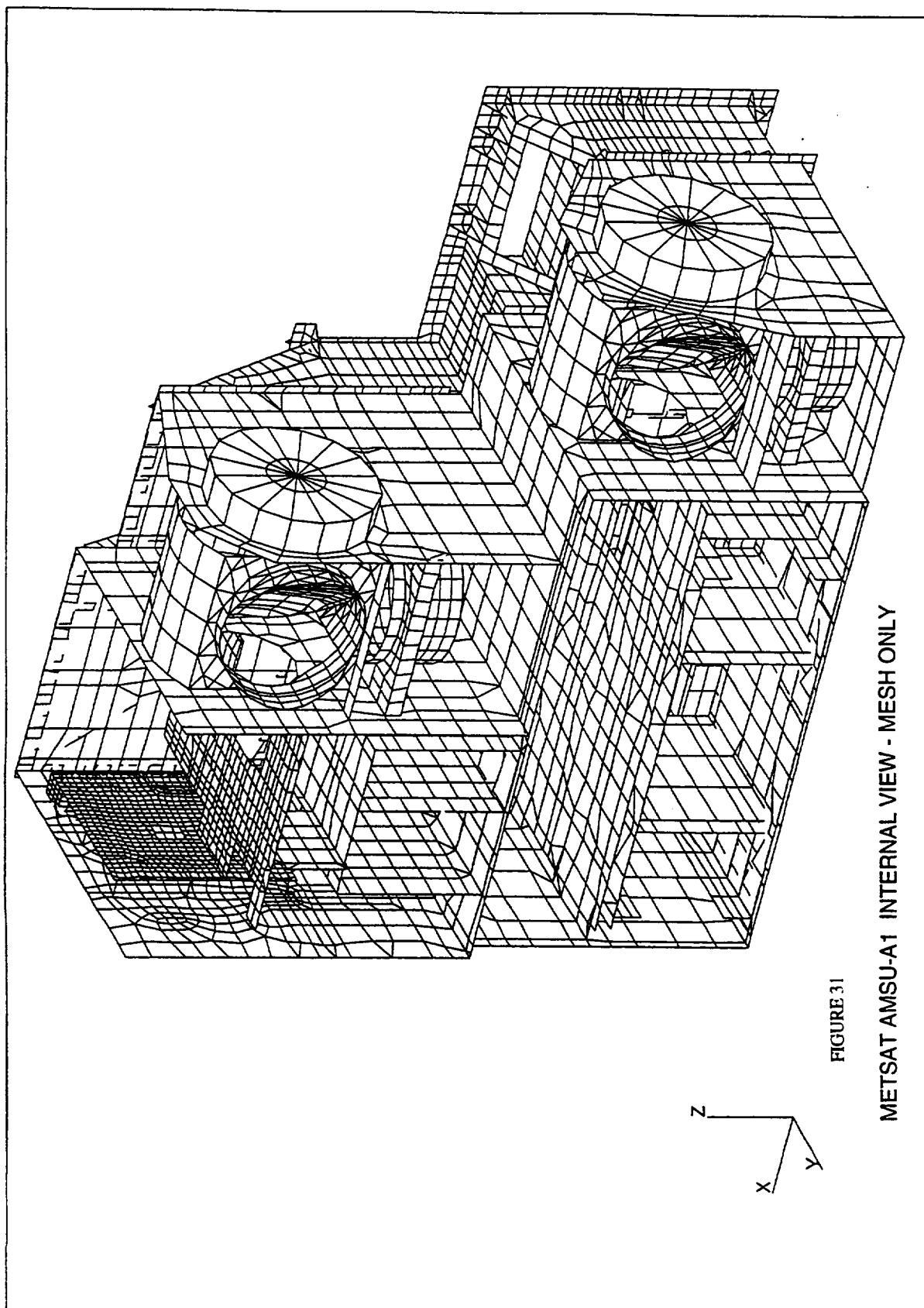


Figure 31 METSAT AMSU-A1 Internal View - Mesh Only
105

1

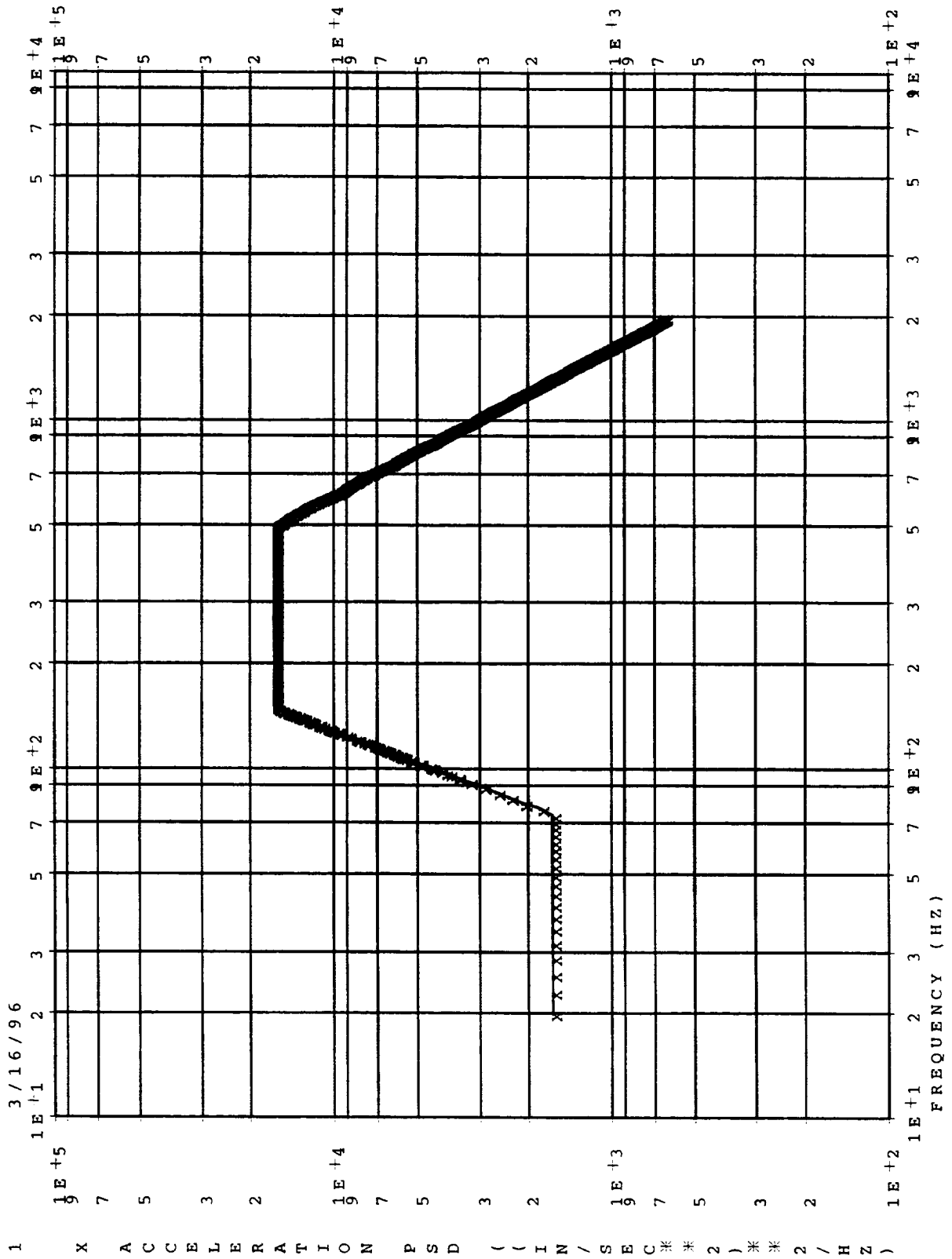


Figure 32 Random Vibration Qual Level (8.8 GRMS) X-Direction
METSAT AMSU-A1 PSD Input

FIGURE 32

RANDOM VIBRATION QUAL LEVEL (8.8 GRMS) X-DIRECTION
METSAT AMSU-A1 PSD INPUT 0-2000 HZ



RANDOM	VIBRATION QUAL LEVEL (8.8 GRMS)	Y-DIRECTION
METSAT	AMSU-A1	PSD INPUT 0-2000 HZ

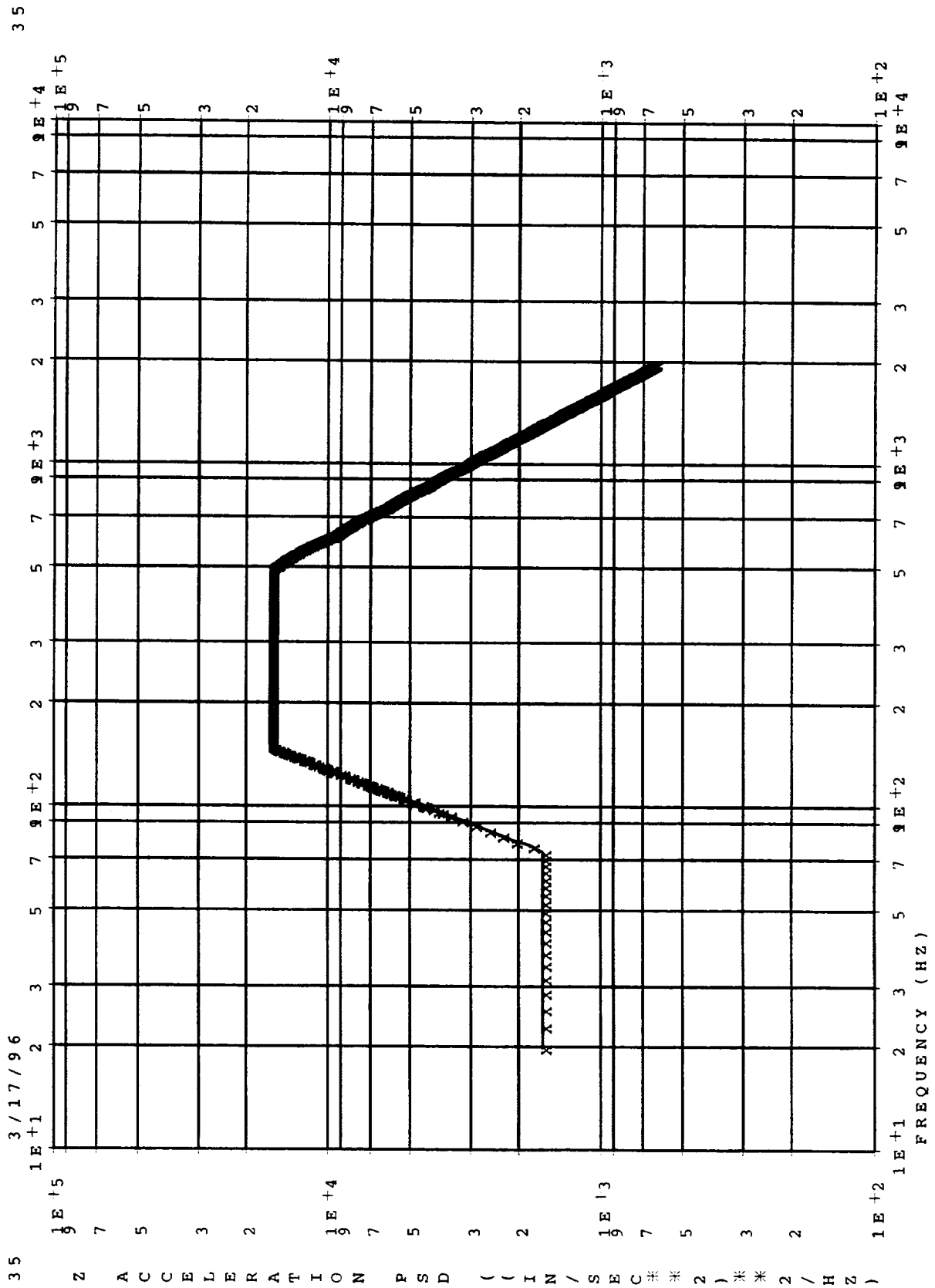


Figure 34 Random Vibration Qual Level (8.8 GRMS) Z-Direction
METSAT AMSU-A1 PSD Input

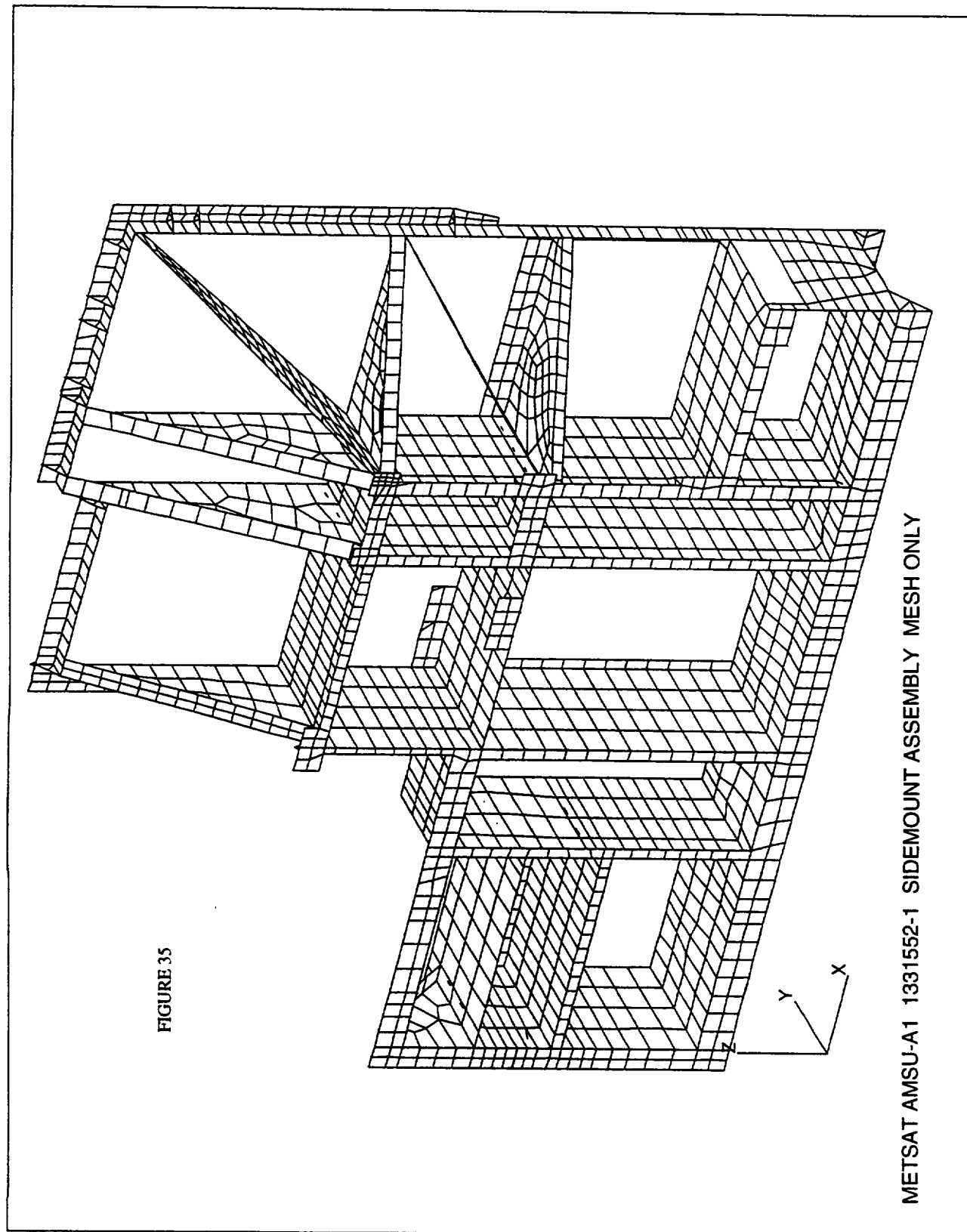


Figure 35 METSAT AMSU-A1 1331552-1 Sidemount Assembly Mesh Only

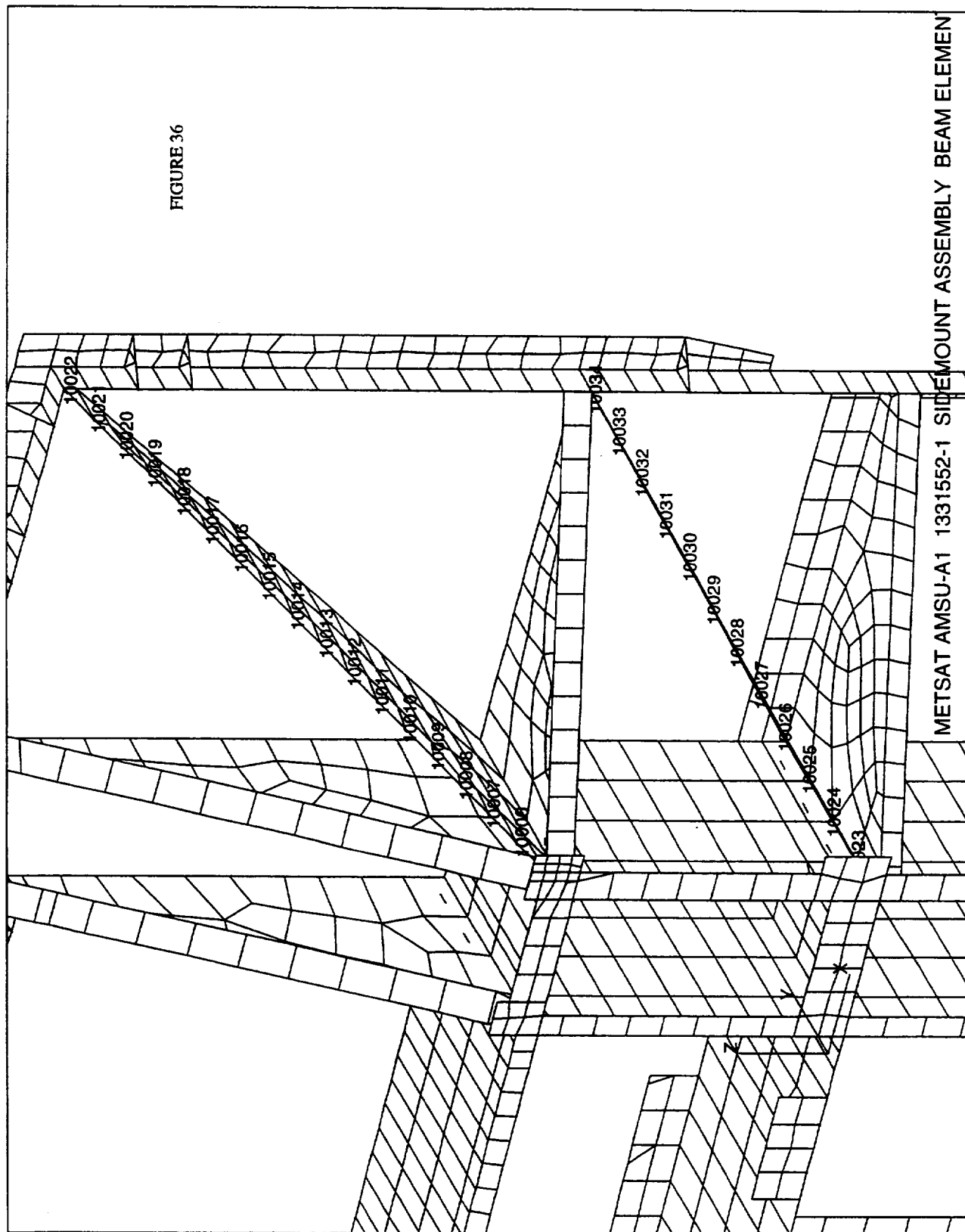


Figure 36 METSAT AMSU-A1 1331552-1 Sidemount Assembly Beam Element

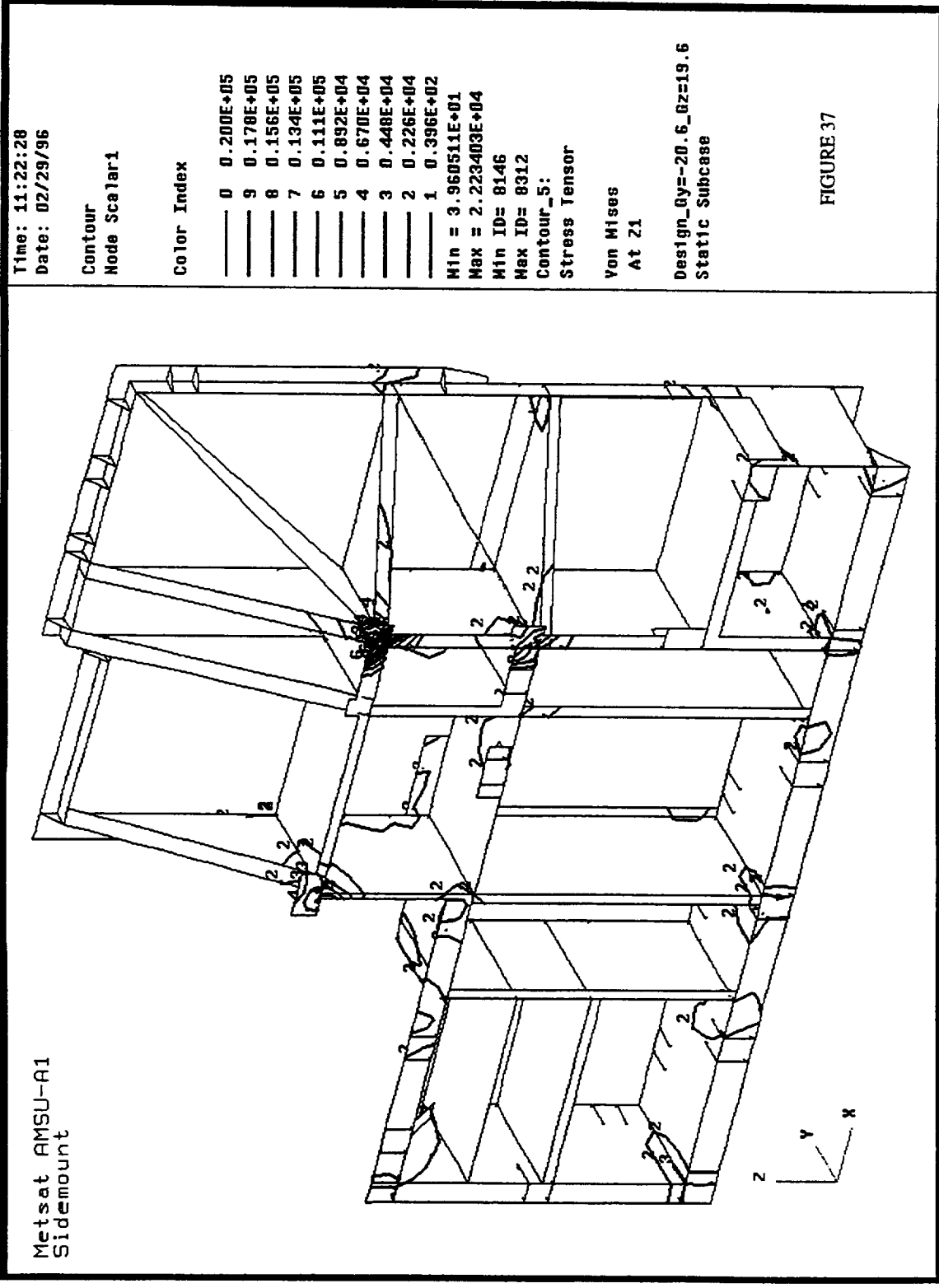


Figure 37 METSAT AMSU-A1 Sidemount

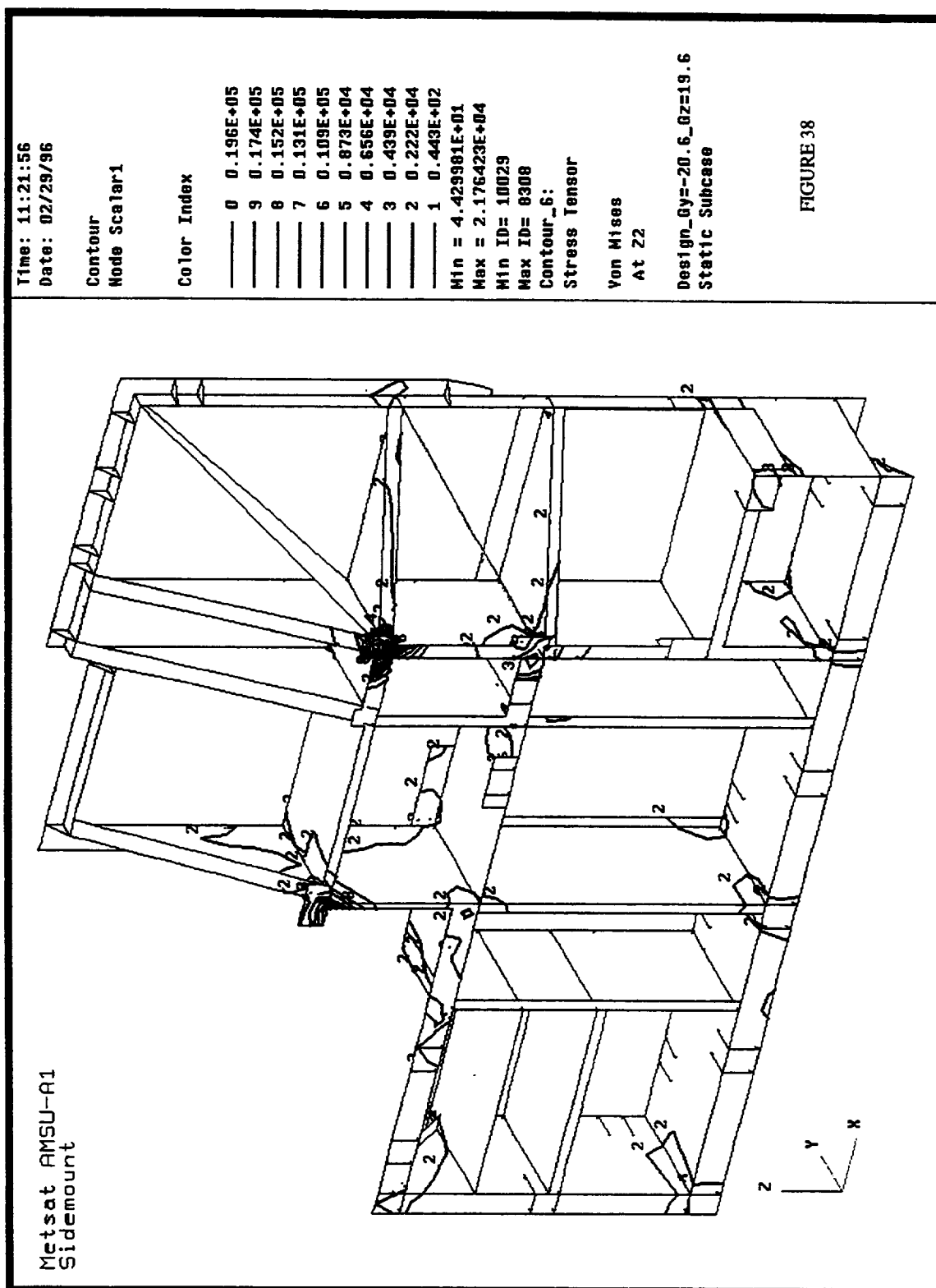


Figure 38 METSAT AMSU-A1 Sidemount

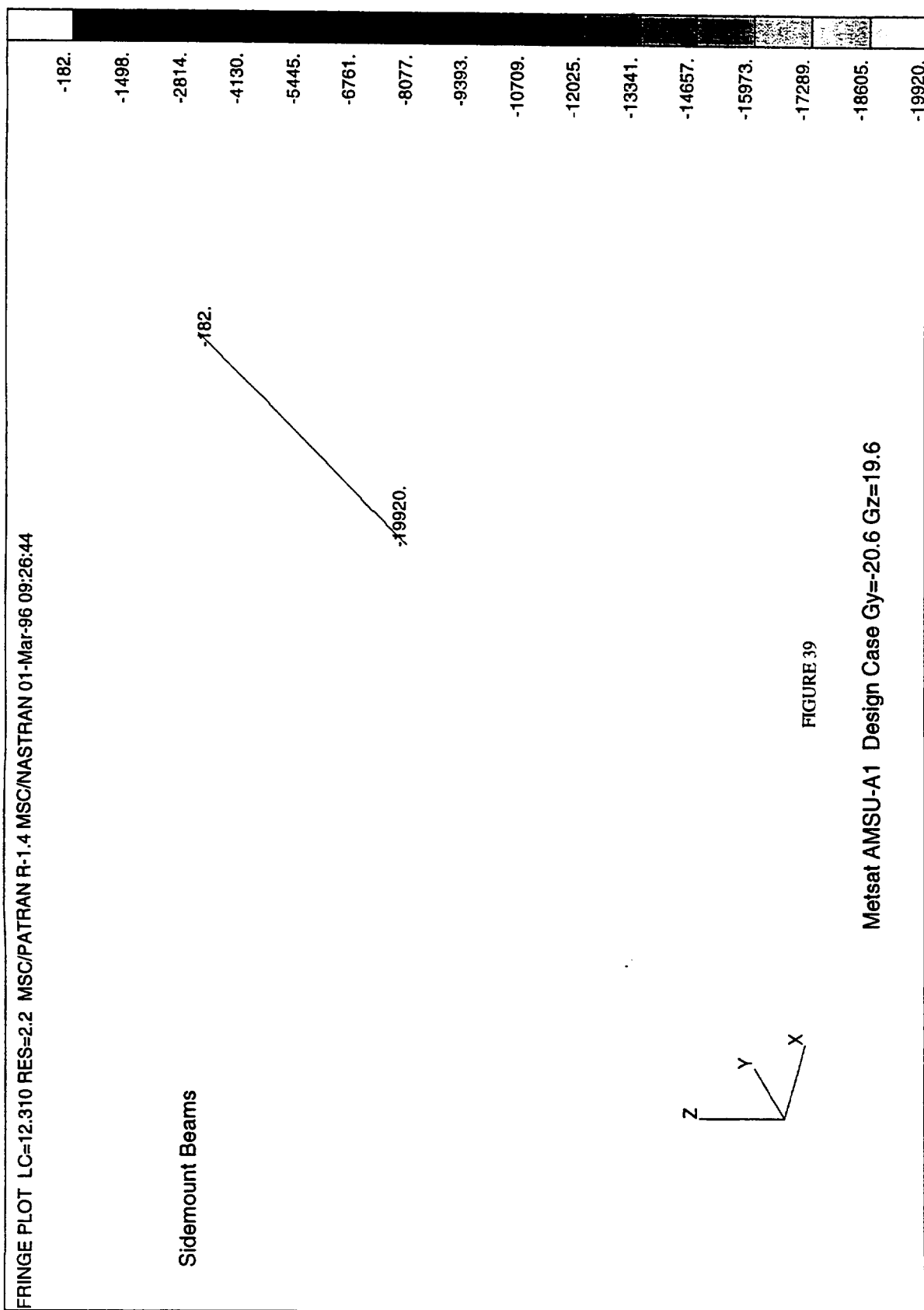


Figure 39 METSAT AMSU-A1 Design Case Gy=-20.6 Gz=19.6

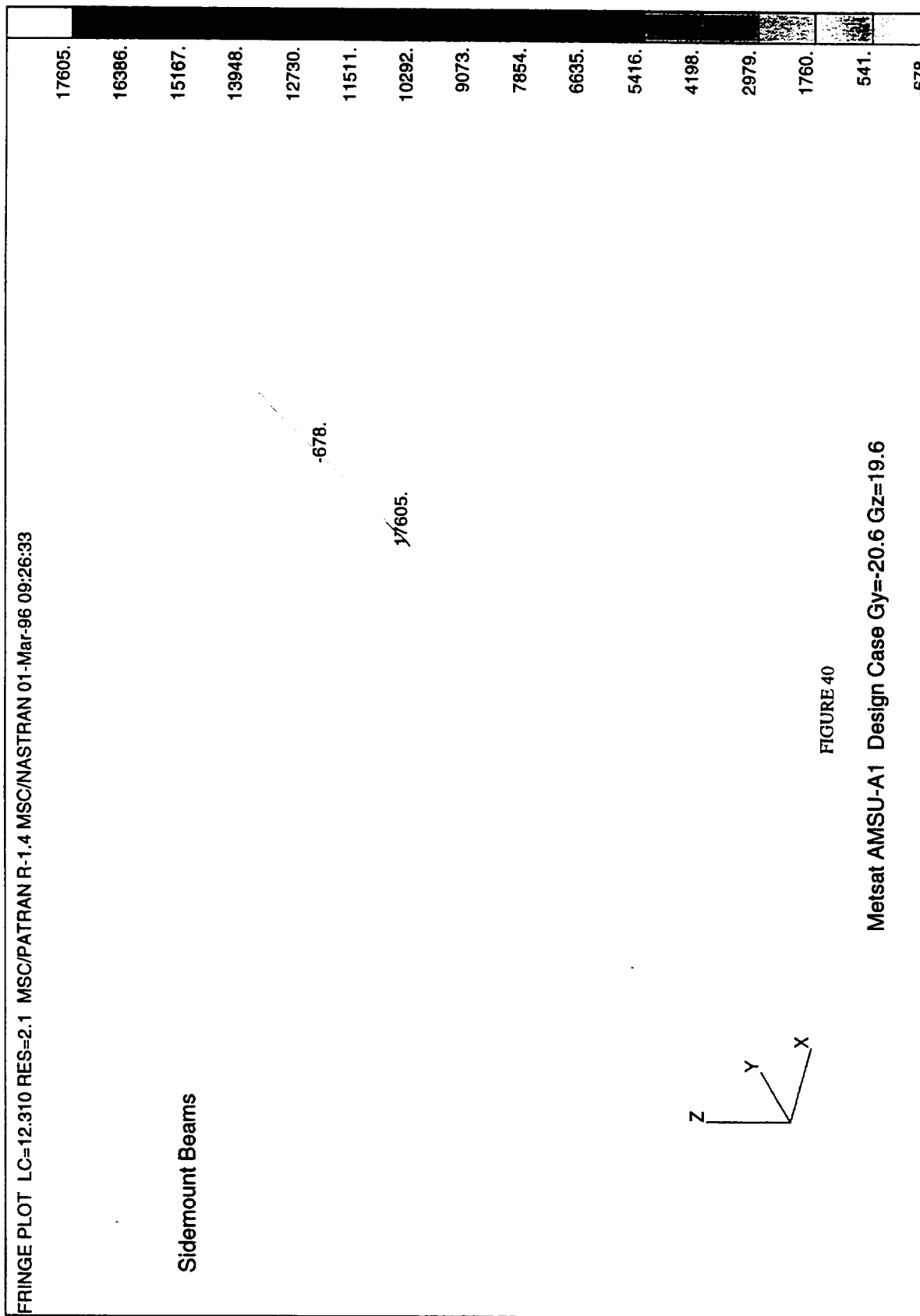


Figure 40 METSAT AMSU-A1 Design Case Gy=-20.6 Gz=19.6

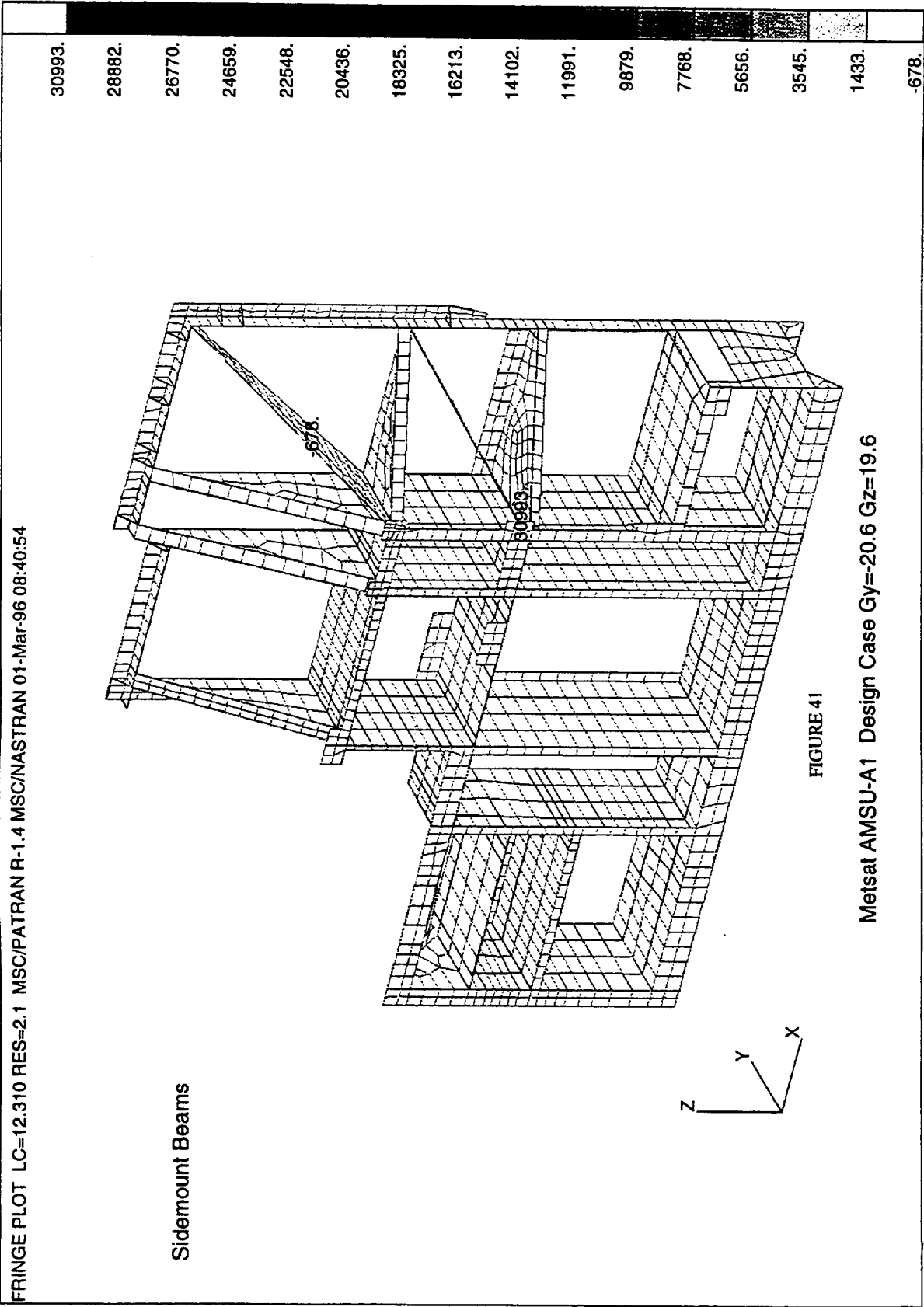


Figure 41 METSAT AMSU-A1 Design Case $G_y = -20.6$ $G_z = 19.6$

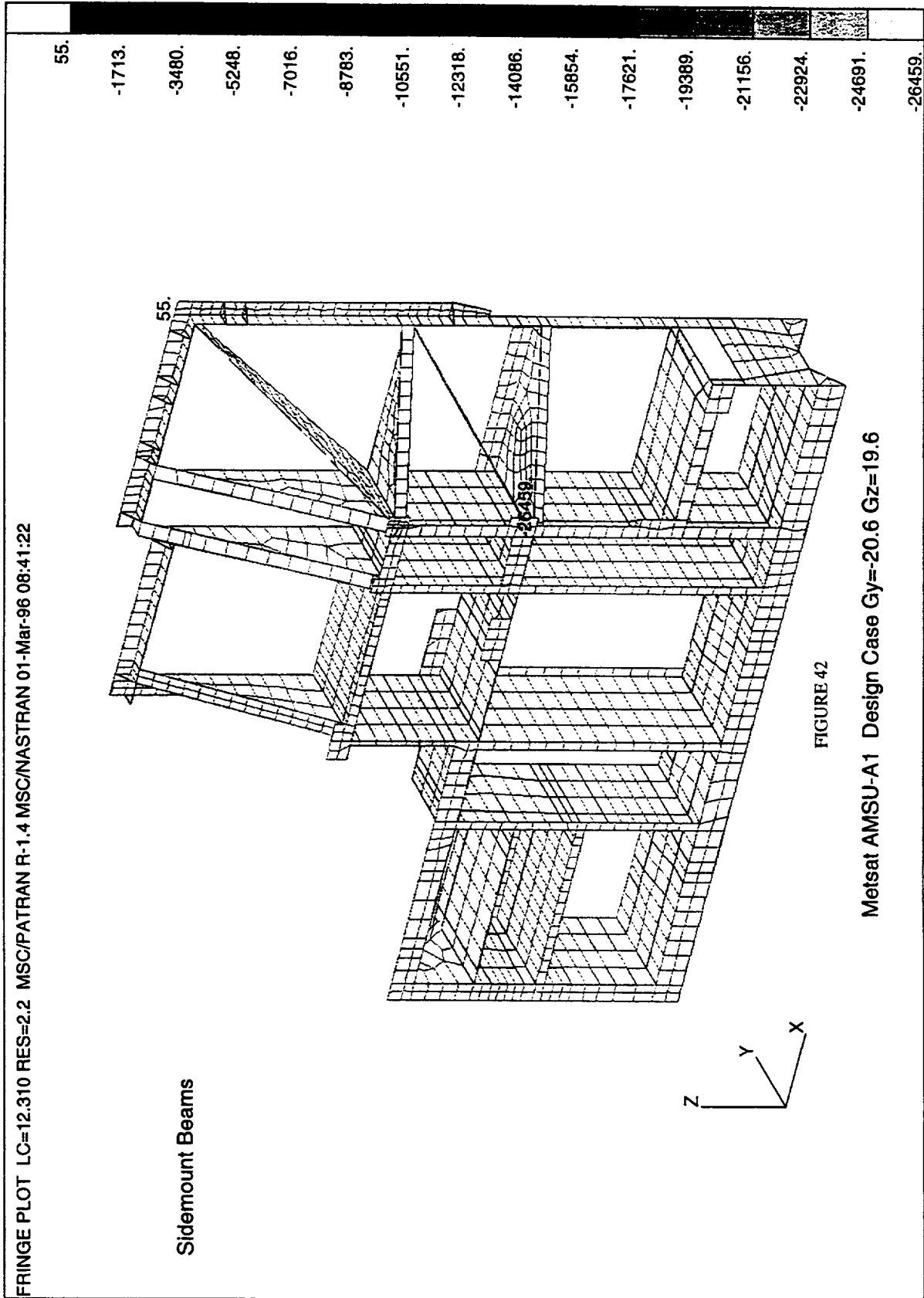


Figure 42 METSAT AMSU-A1 Design Case Gy=-20.6 Gz=19.6

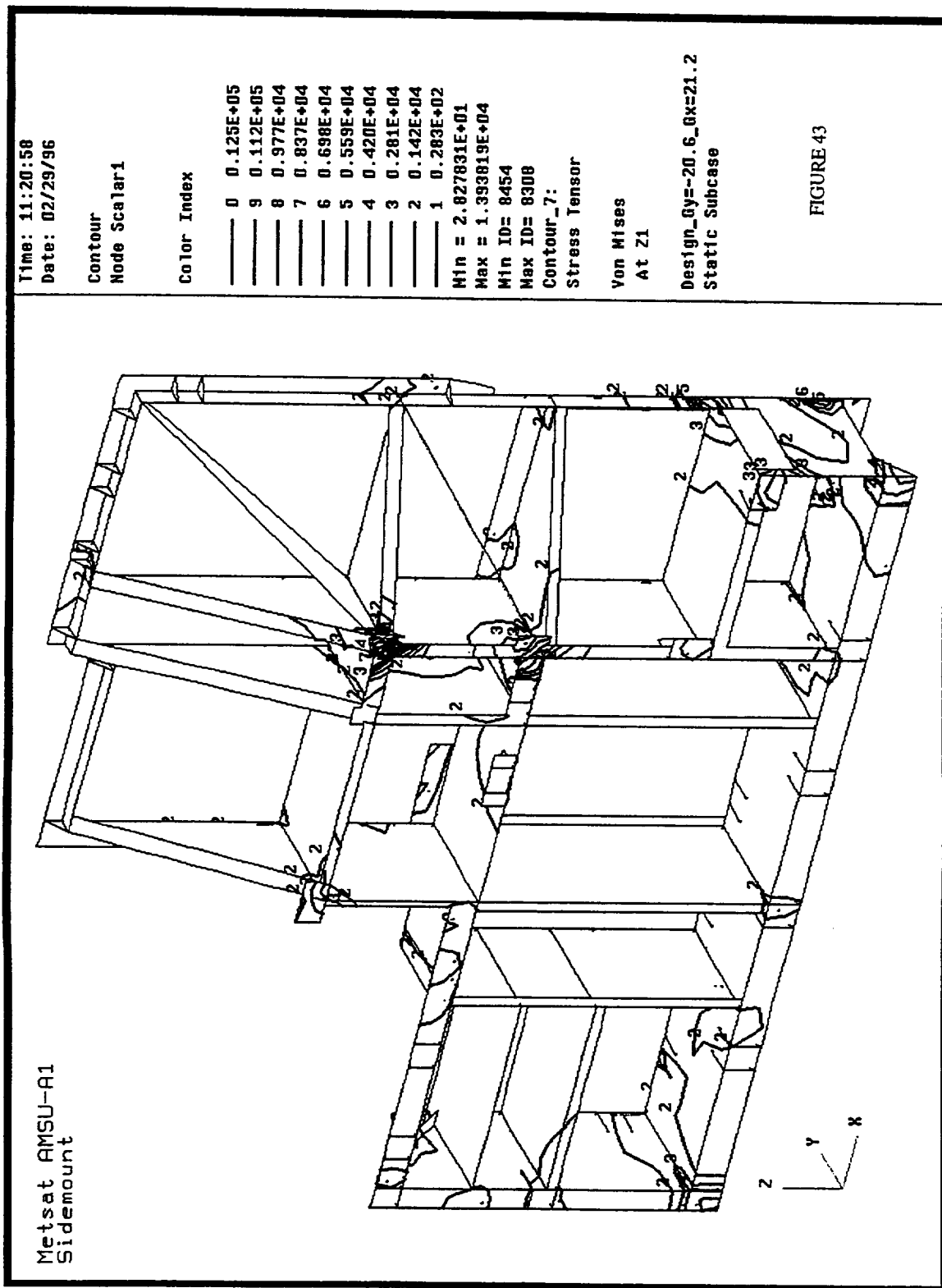


Figure 43 METSAT AMSU-A1 Sidemount

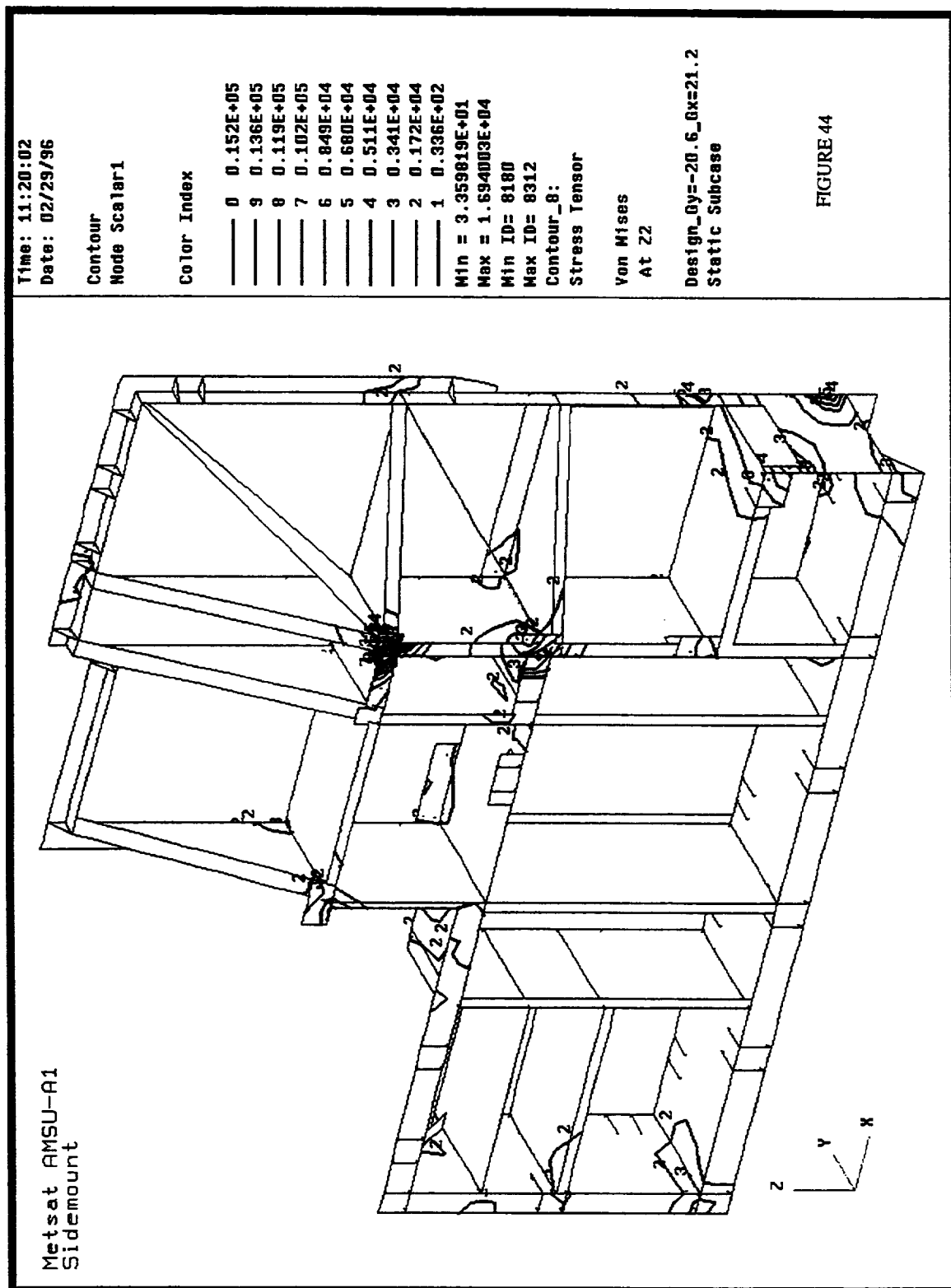


Figure 44 METSAT AMSU-A1 Sidemount

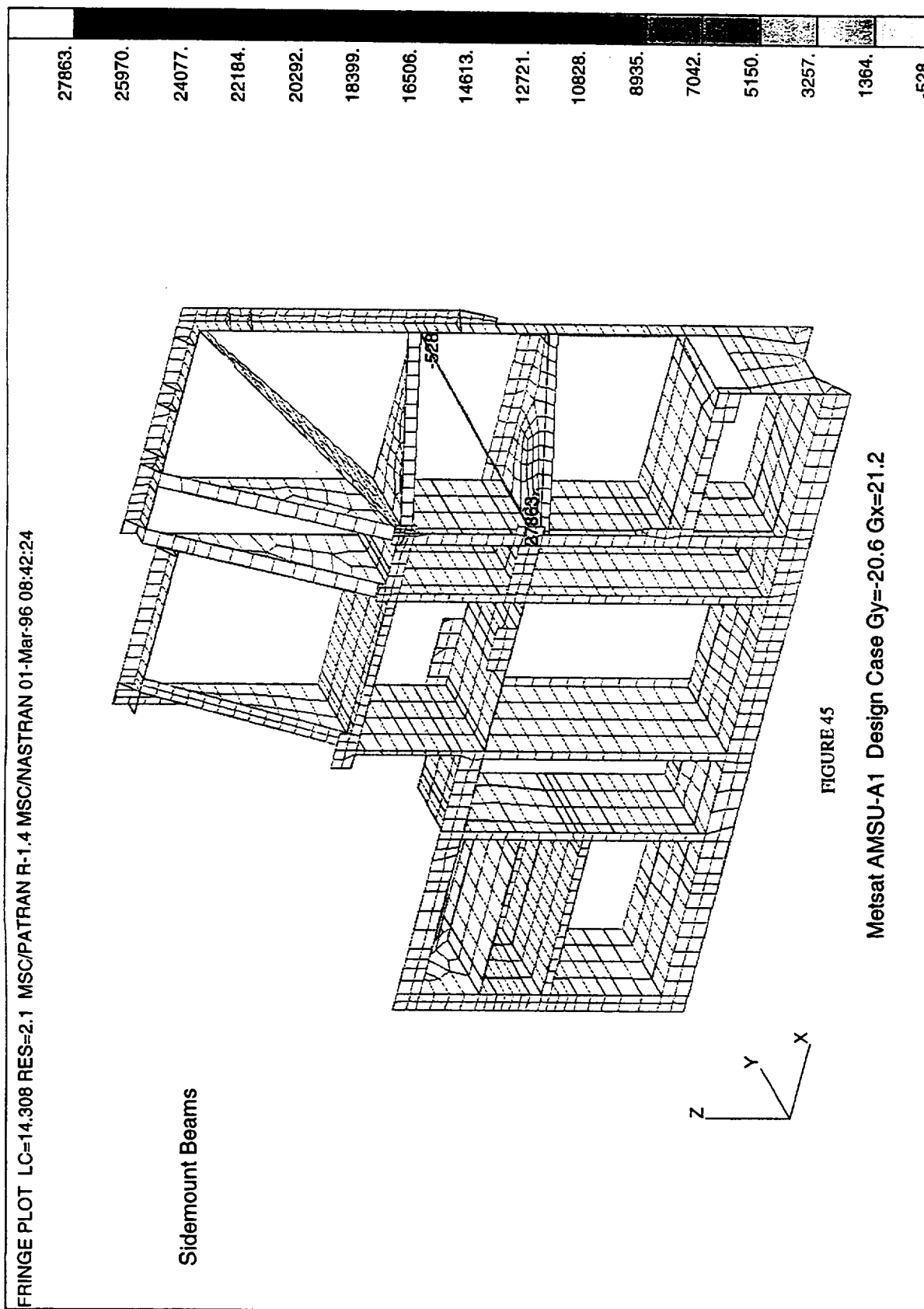


Figure 45 METSAT AMSU-A1 Design Case $G_y = -20.6$ $G_x = 21.2$

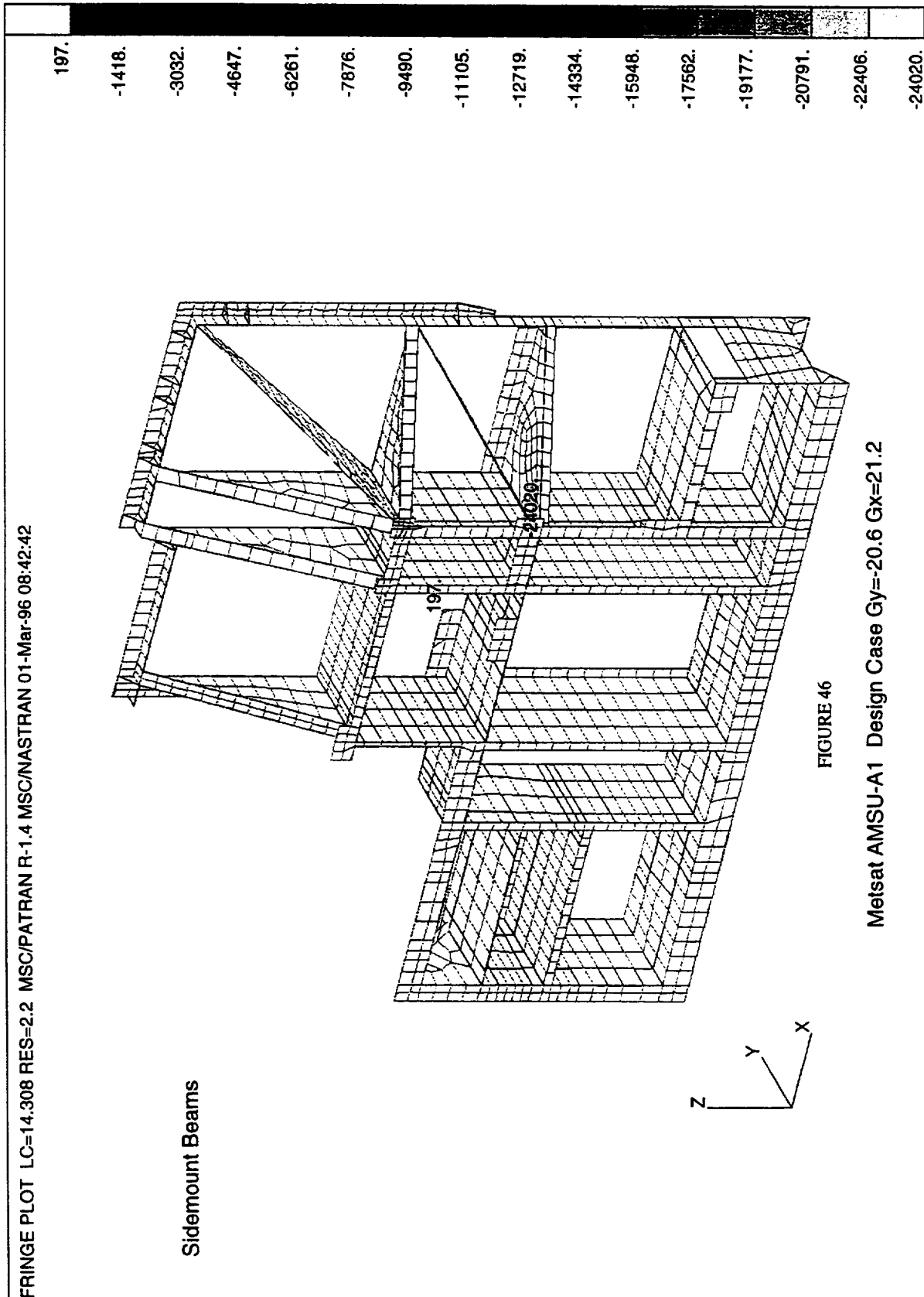


Figure 46 METSAT AMSU-A1 Design Case Gy=-20.6 Gx=21.2

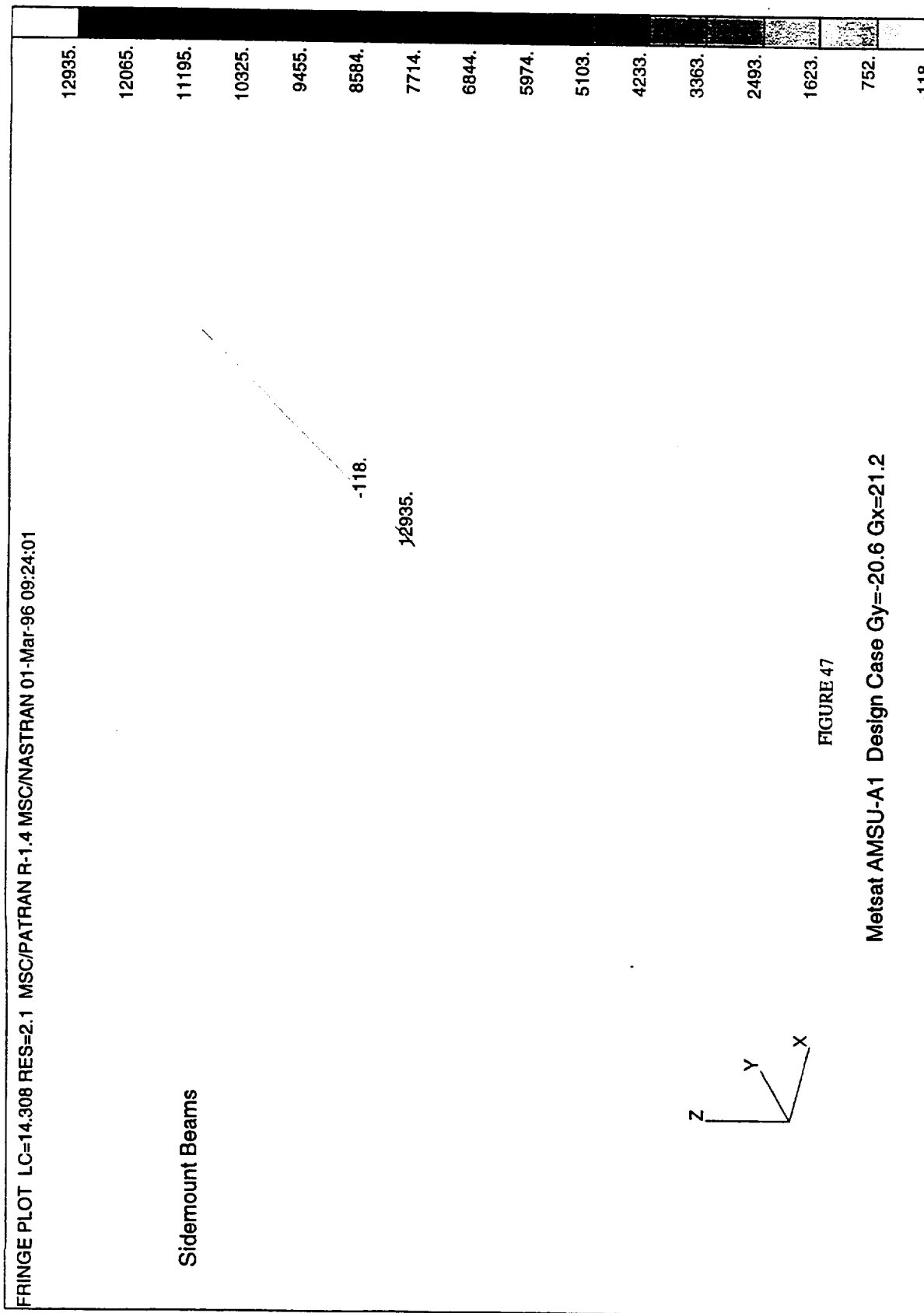


Figure 47 METSAT AMSU-A1 Design Case $G_y = -20.6$ $G_x = 21.2$

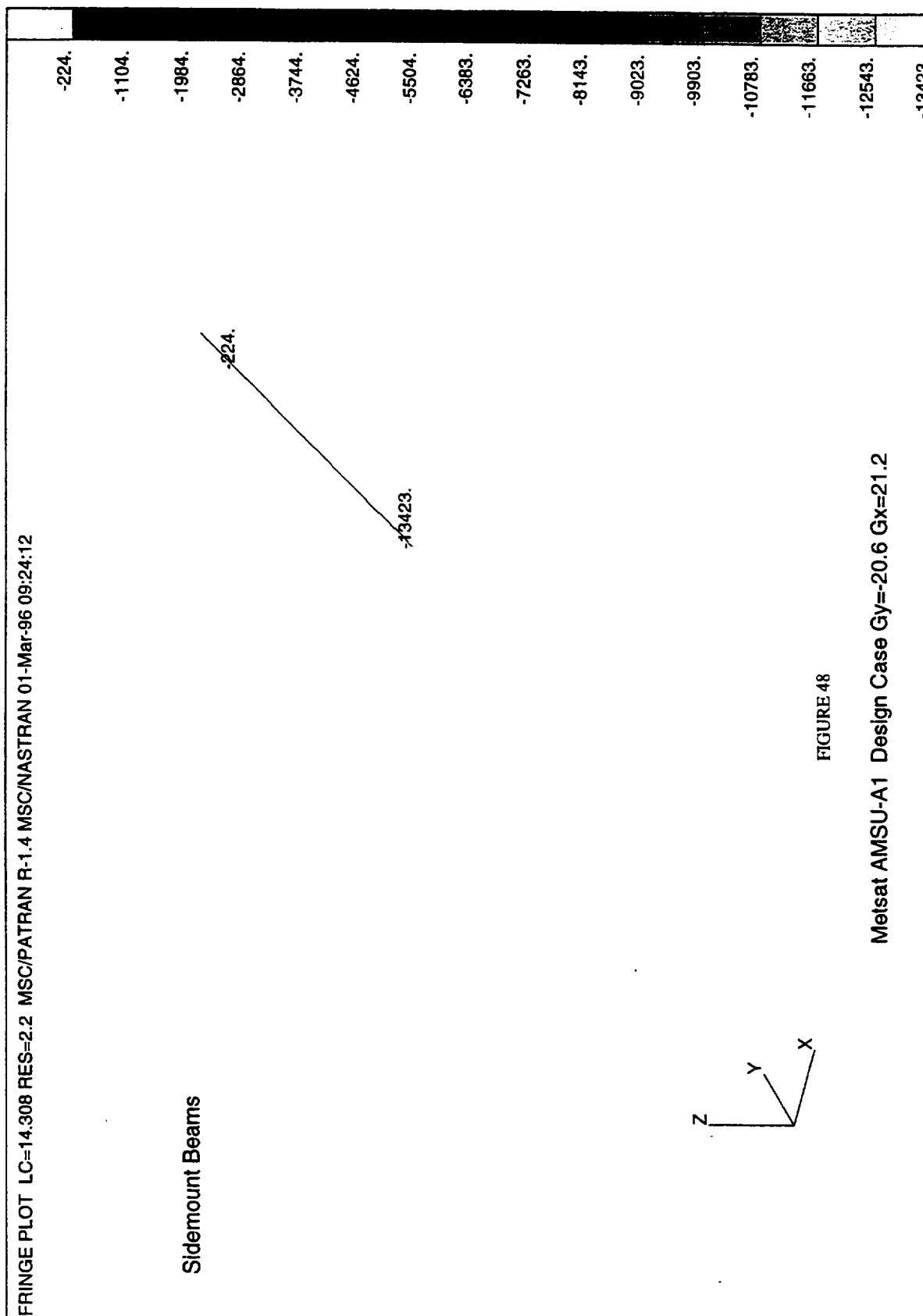


Figure 48 METSAT AMSU-A1 Design Case Gy=-20.6 Gx=21.2

APPENDIX A

NASTRAN FINITE ELEMENT MODEL

The NASTRAN finite element model of the METSAT AMSU-A1 Module is shown in its entirety in Figures 28 thru 31 and again in Figure A1(a, b, c, and d) in this appendix. Figure A1d is a section view of the model, showing the components modeled in the interior (i.e. shelves, card cages, warmload structures). Elements and grids are highlighted in the piece part models of Figures A2 through A-??? that are combined to form the METSAT AMSU-A1 Module model.

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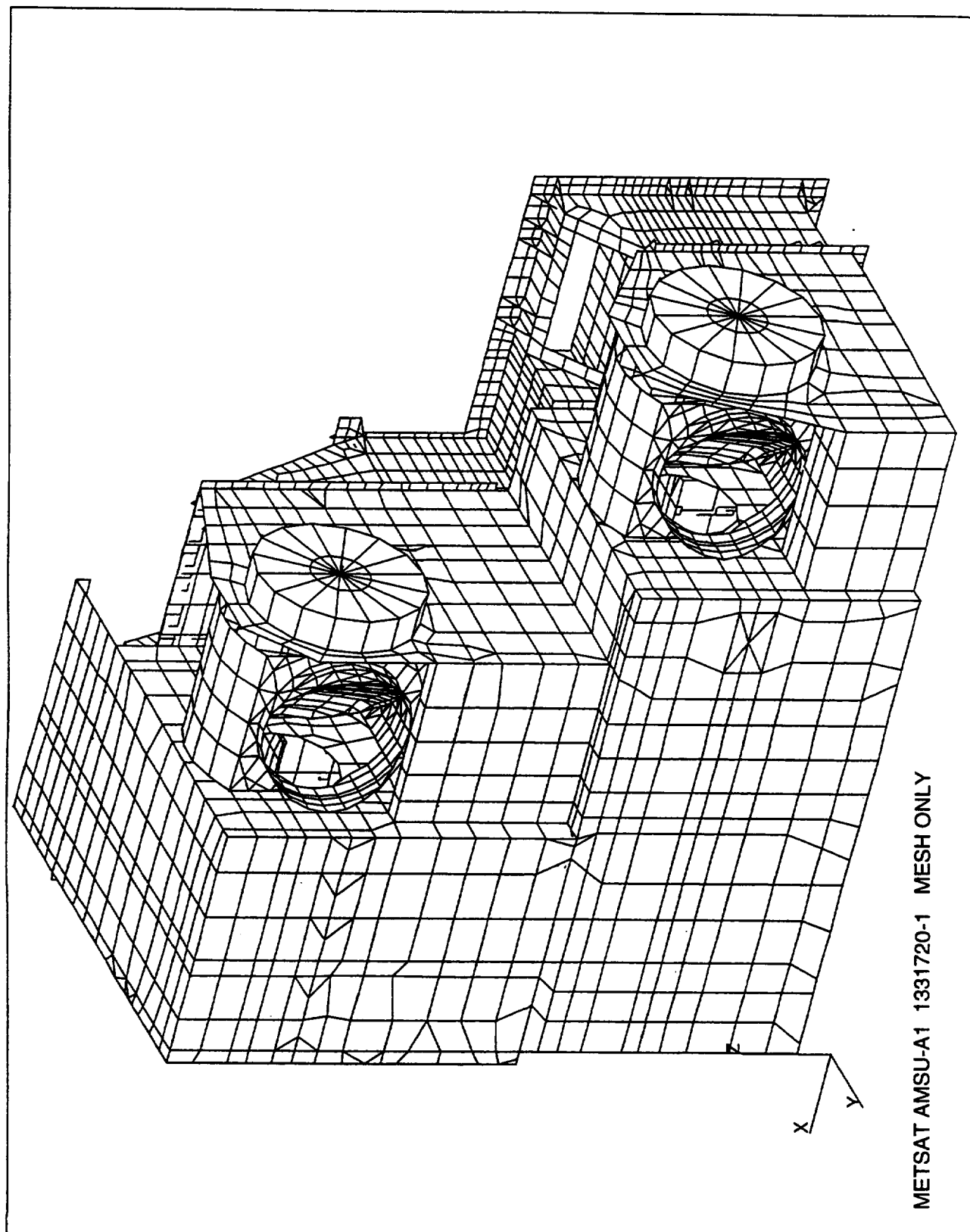


Figure A-1 METSAT AMSU-A1 1331720-1 Mesh Only (Sheet 1 of 3)

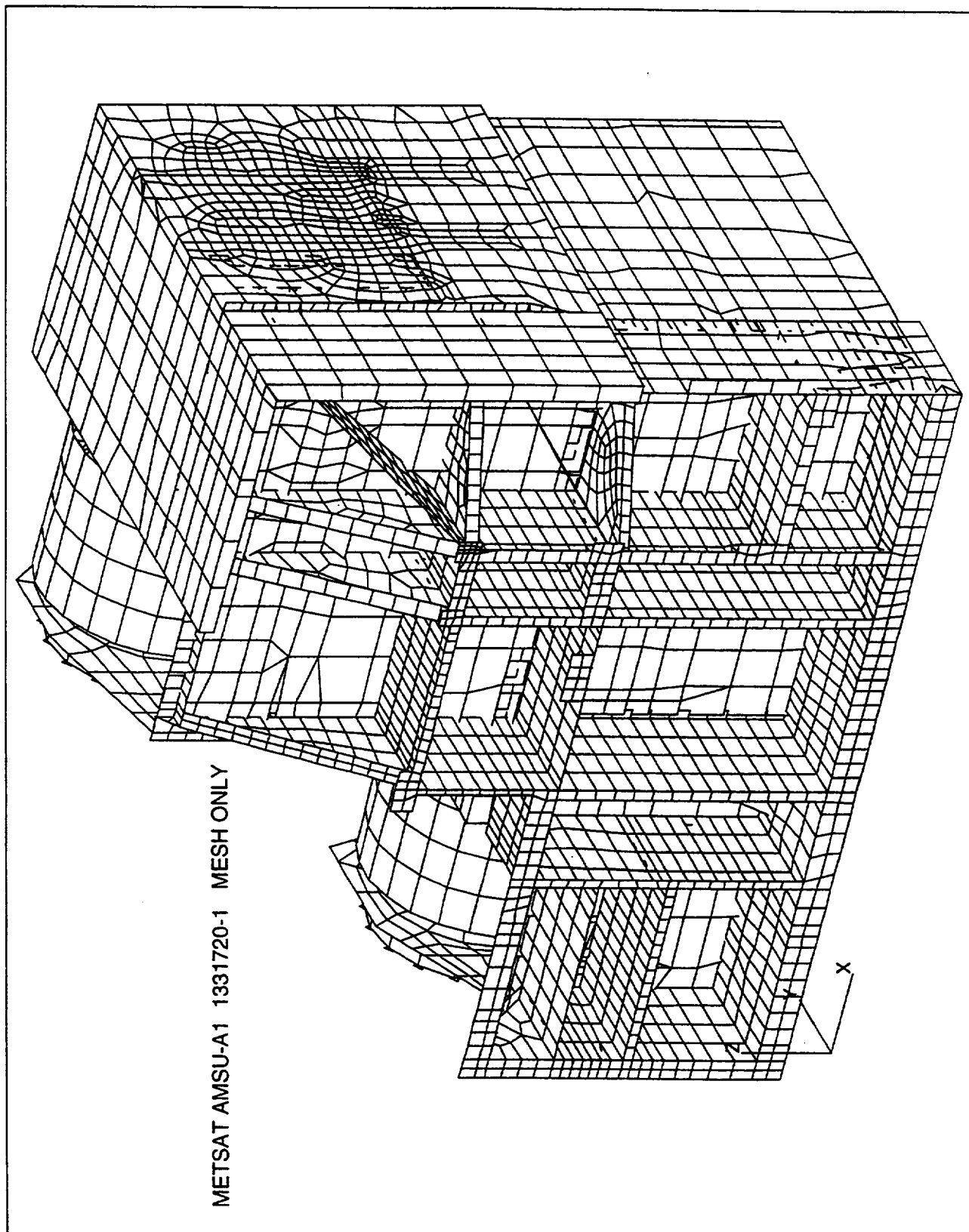


Figure A-1 METSAT AMSU-A1 1331720-1 Mesh Only (Sheet 2 of 3)

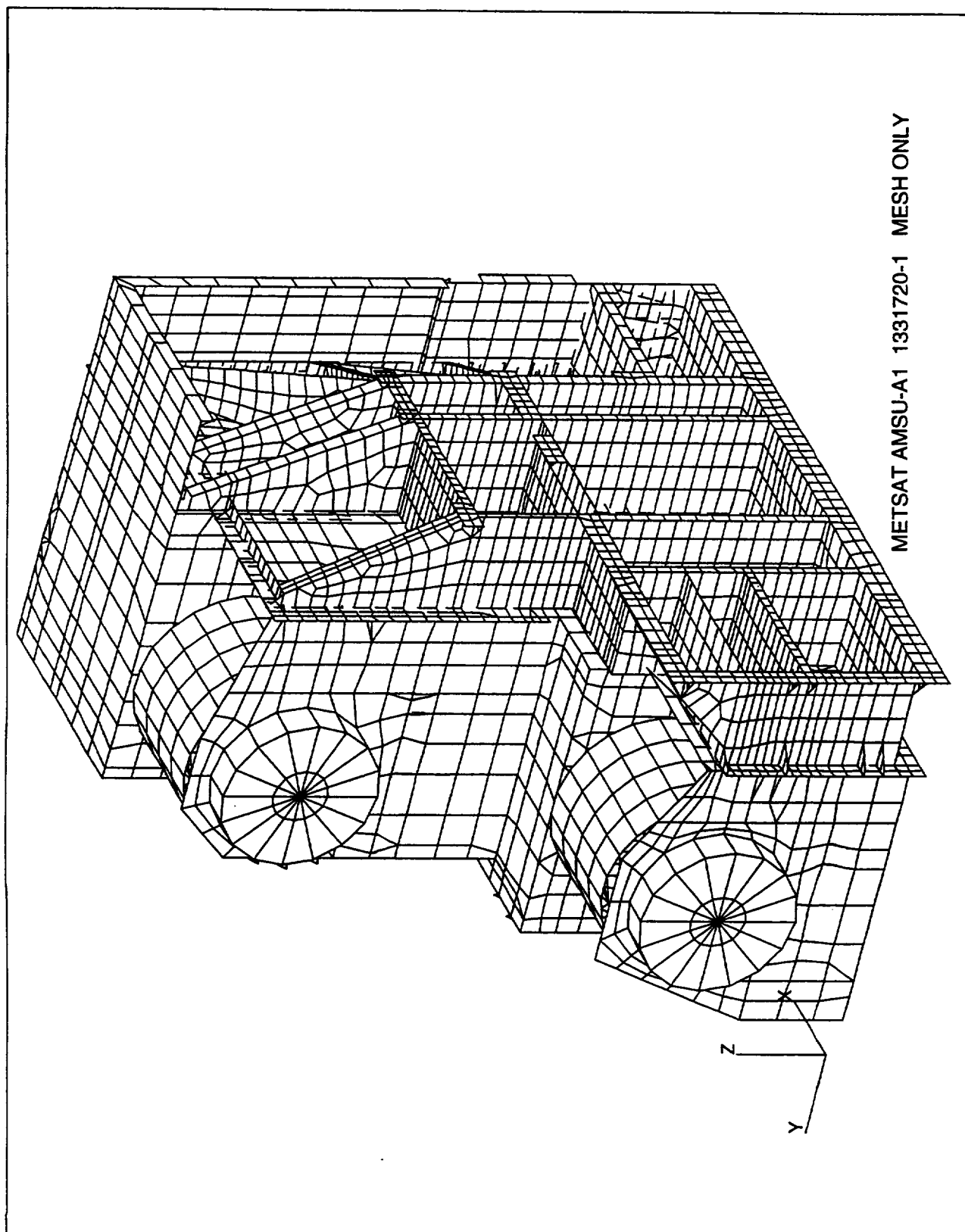


Figure A-1 METSAT AMSU-A1 1331720-1 Mesh Only (Sheet 3 of 3)

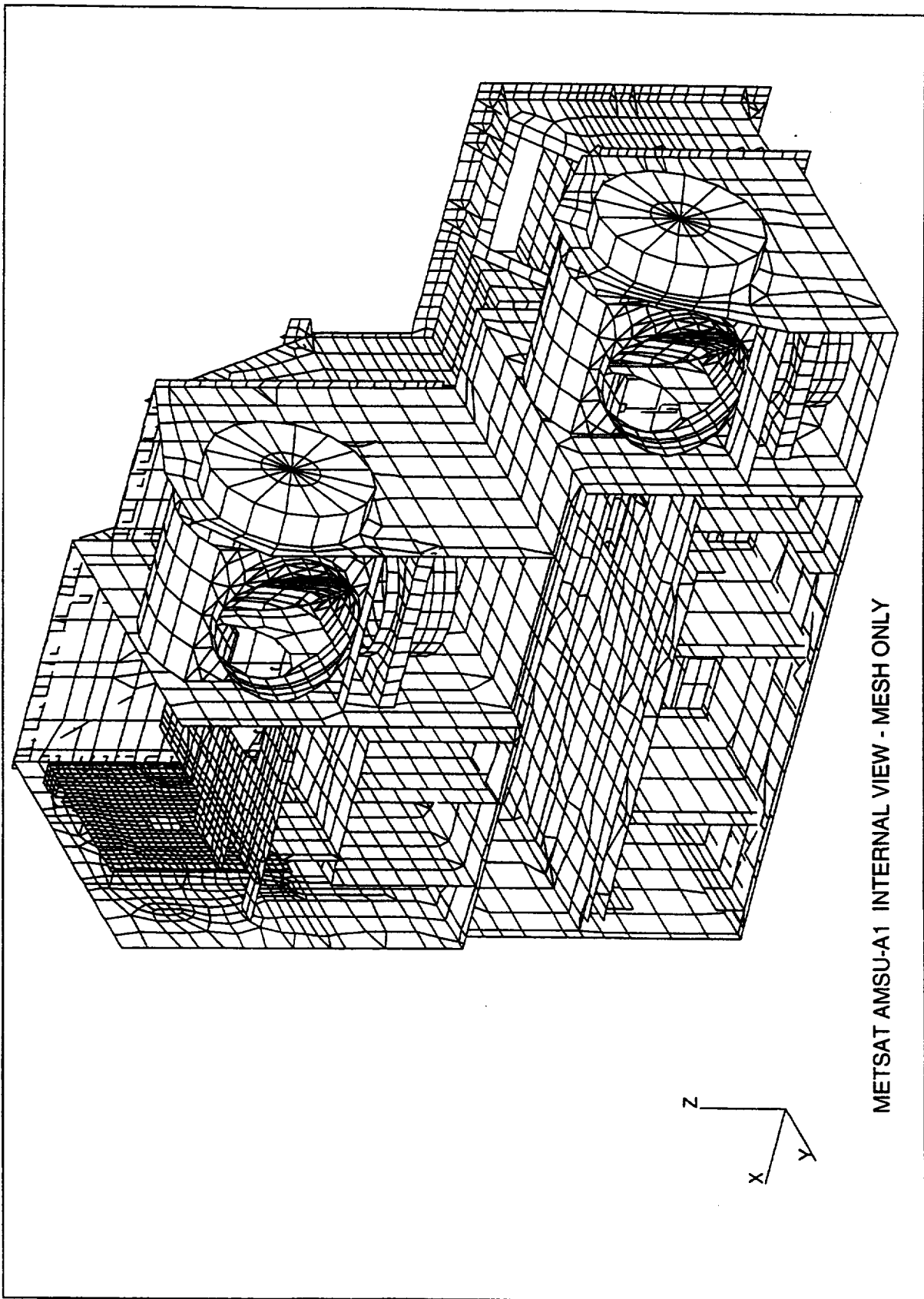


Figure A-2 METSAT AMSU-A1 Internal View - Mesh only

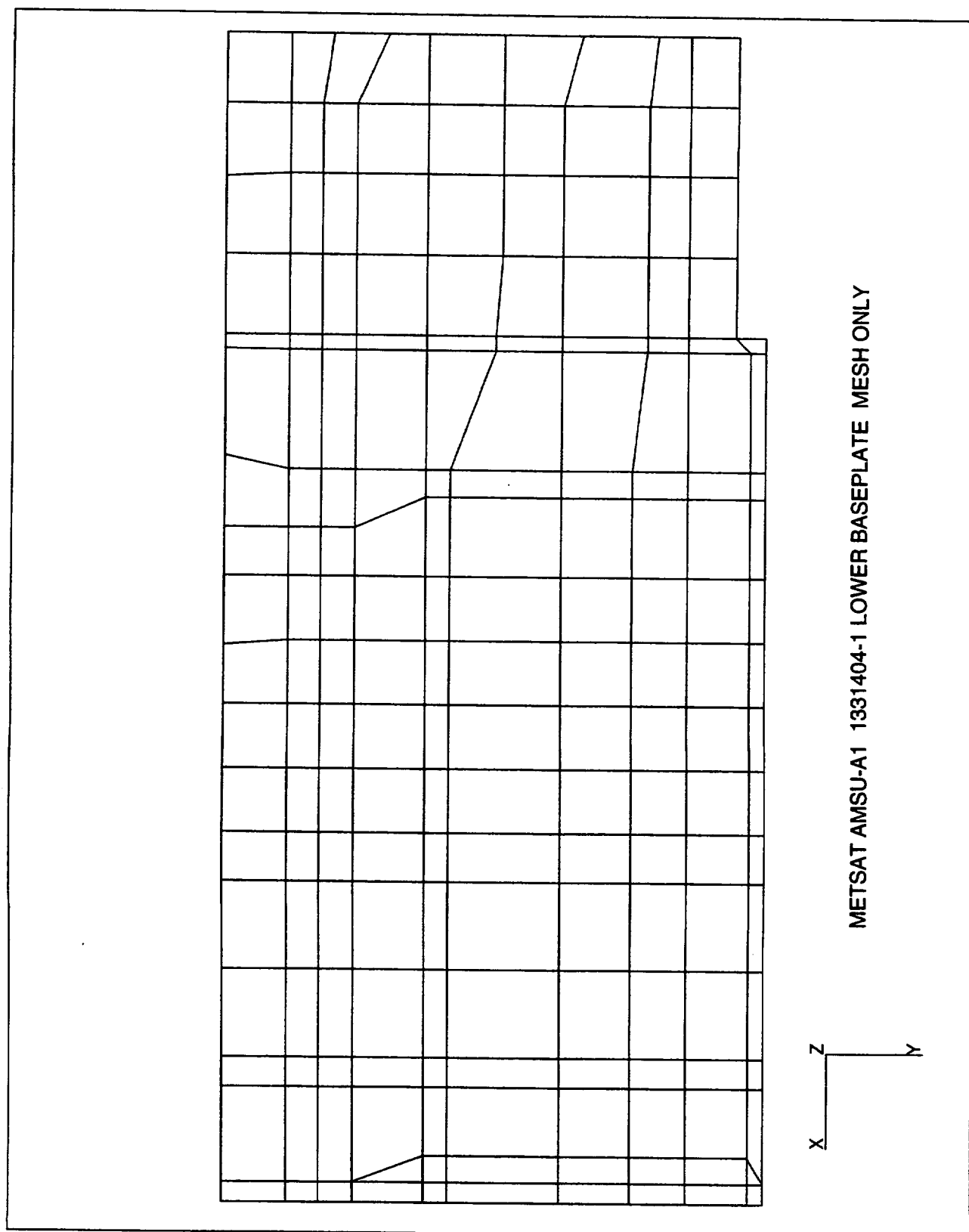


Figure A-3 METSAT AMSU-A1 1331404-1 Lower Baseplate Mesh Only

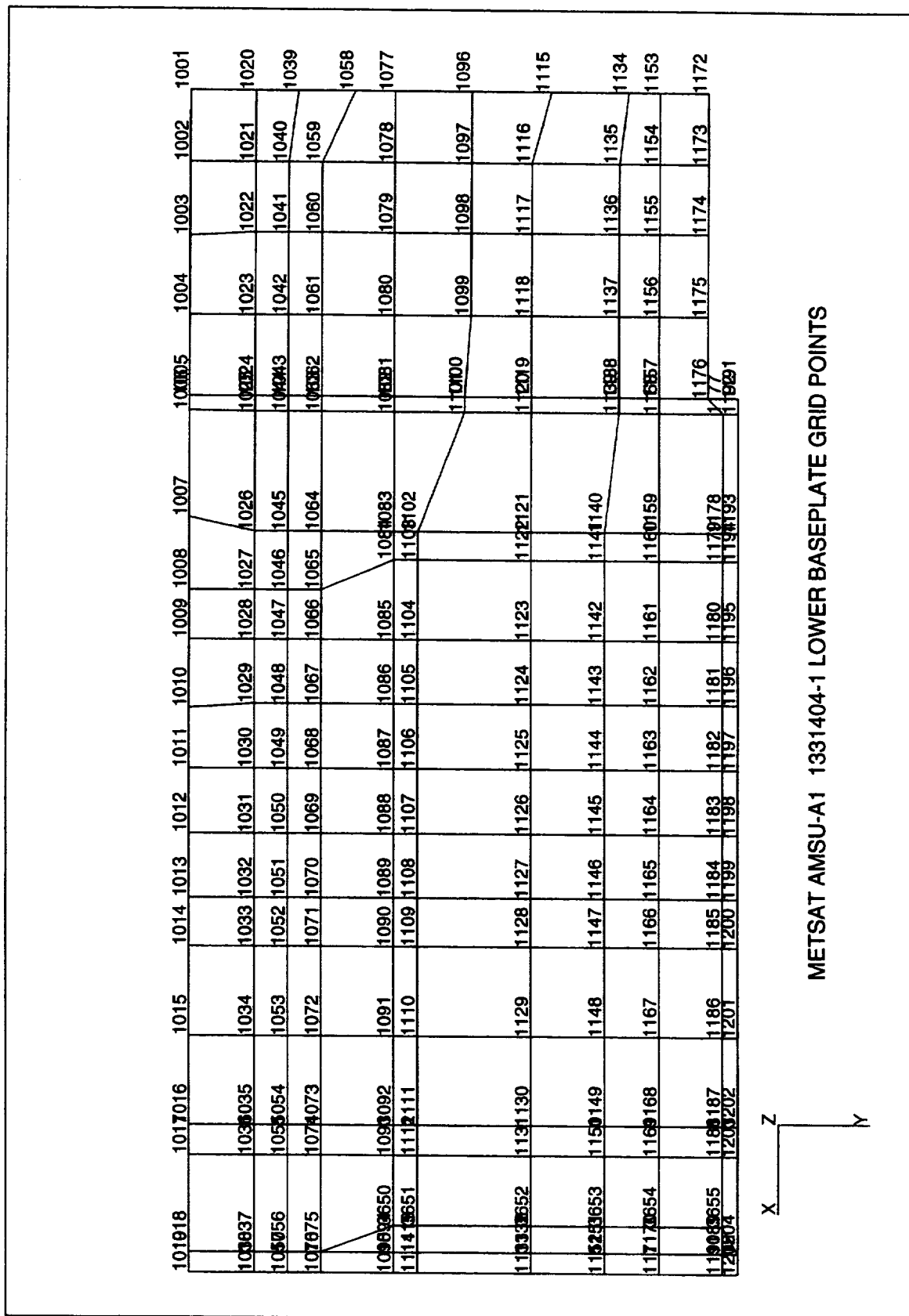
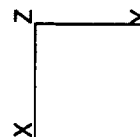


Figure A-4 METSAT AMSU-A1 1331404-1 Lower Baseplate Grid Points

125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108
143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126
161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144
179	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162
197	196	195	194	193	192	191	190	189	188	187	186	185	184	183	182	181	180
215	214	213	212	211	210	209	208	207	206	205	204	203	202	201	200	199	198
233	232	231	230	229	228	227	226	225	224	223	222	221	220	219	218	217	216
251	250	249	248	247	246	245	244	243	242	241	240	239	238	237	236	235	234
269	268	267	266	265	264	263	262	261	260	259	258	257	256	255	254	253	252
287	286	285	284	283	282	281	280	279	278	277	276	275	274	273	272	271	270



METSAT AMSU-A1 1331404-1 LOWER BASEPLATE SHELL ELEMENTS

Figure A-5 METSAT AMSU-A1 1331404-1 Lower Baseplate Shell Elements

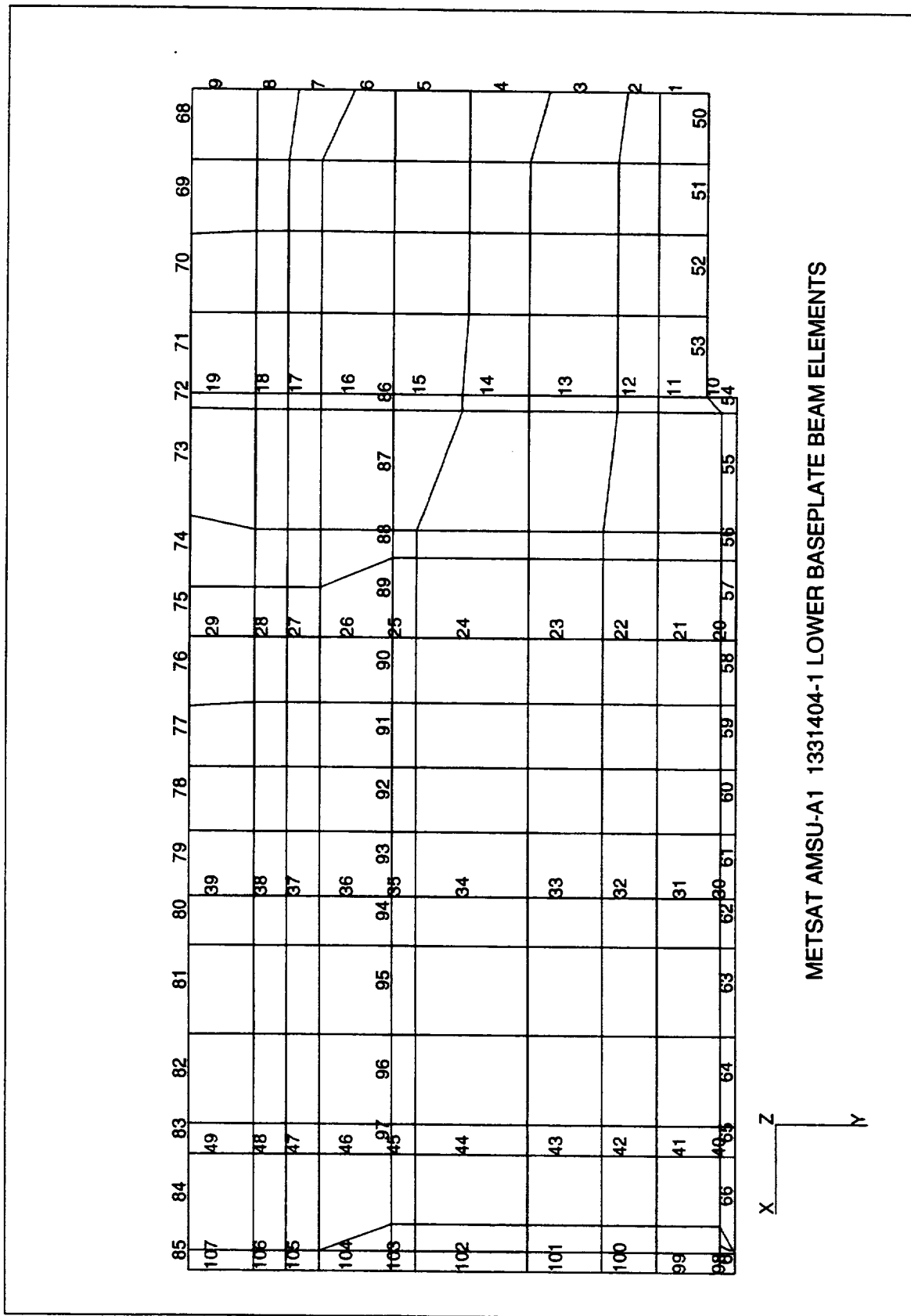


Figure A-6 METSAT AMSU-A1 1331404-1 Lower Baseplate Beam Elements

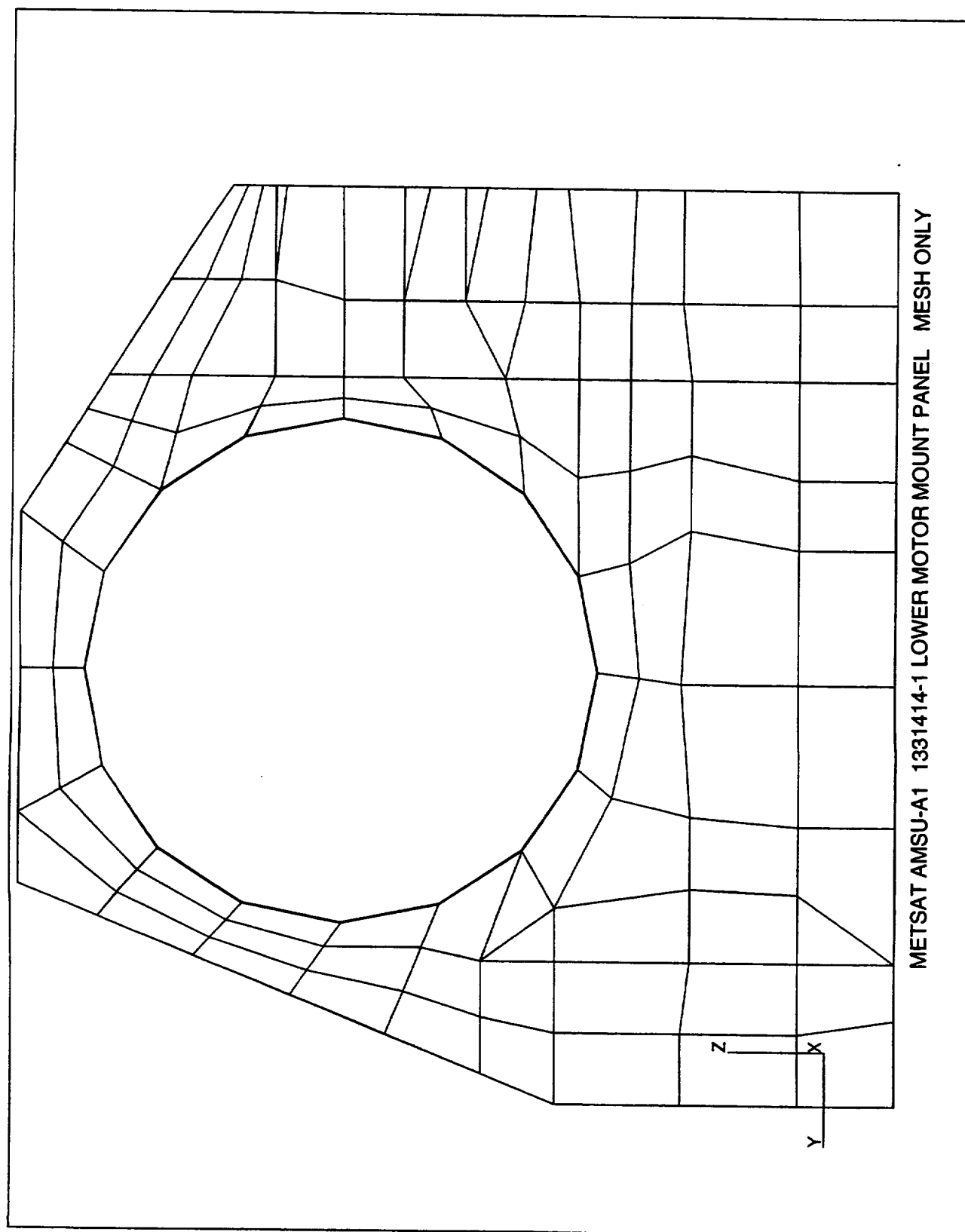


Figure A-7 METSAT AMSU-A1 1331414-1 Lower Motor Mount Panel Mesh Only

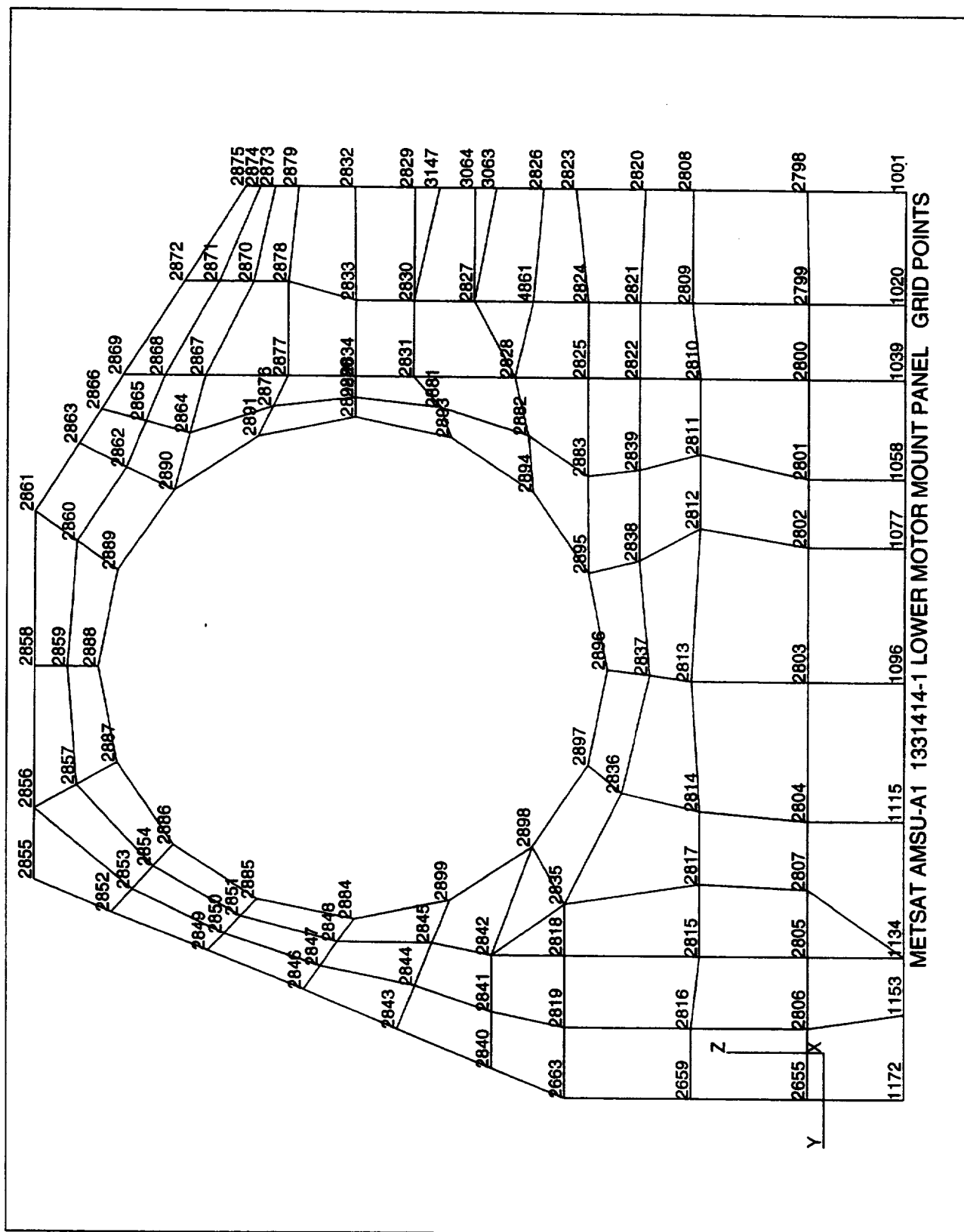


Figure A-8 METSAT AMSU-A1 1331414-1 Lower Motor Mount Panel Grid Points

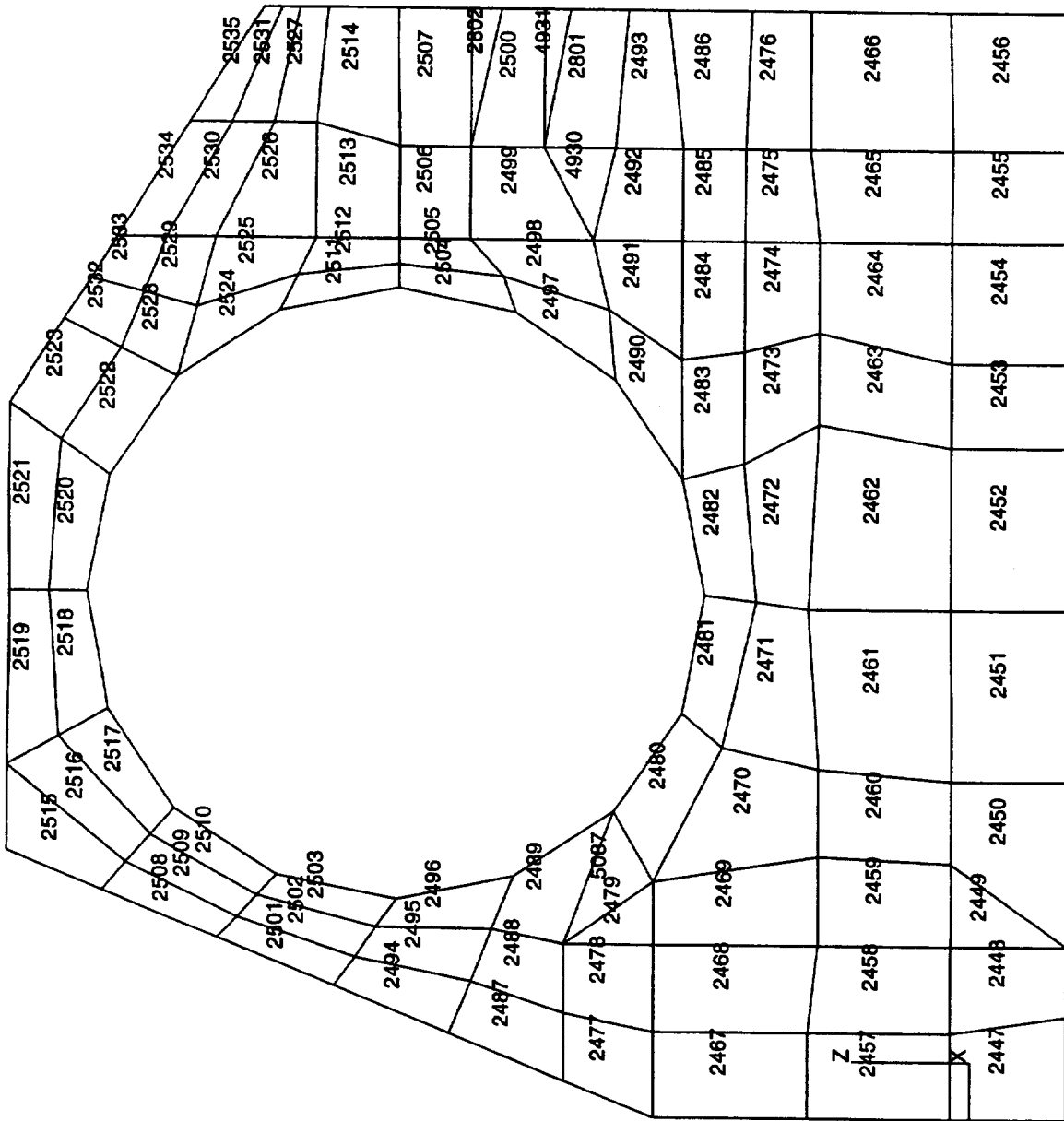


Figure A-9 METSAT AMSU-A1 1331414-1 Lower Motor Mount Panel Shell Elements

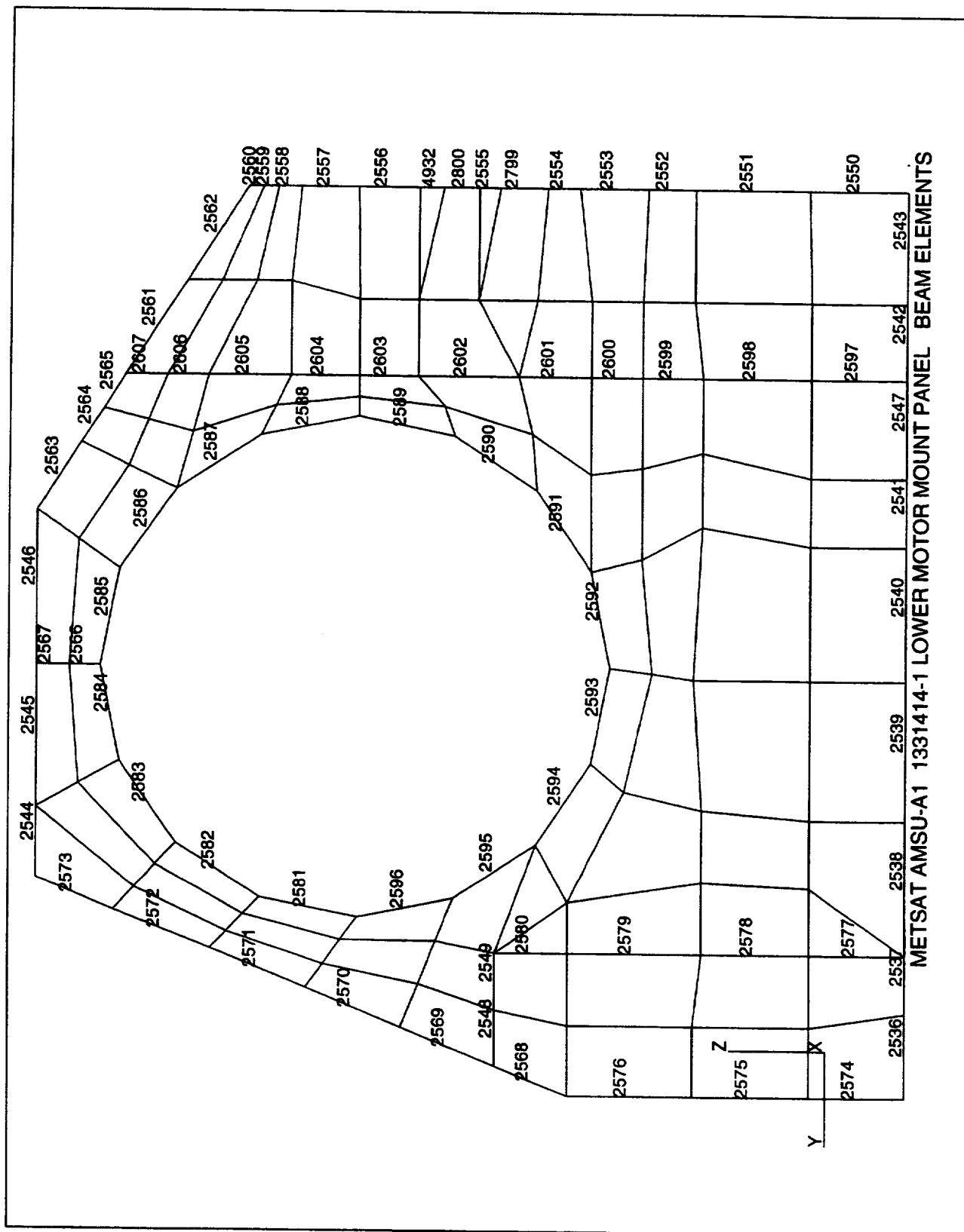


Figure A-10 METSAT AMSU-A1 1331414-1 Lower Motor Mount Panel Beam Elements

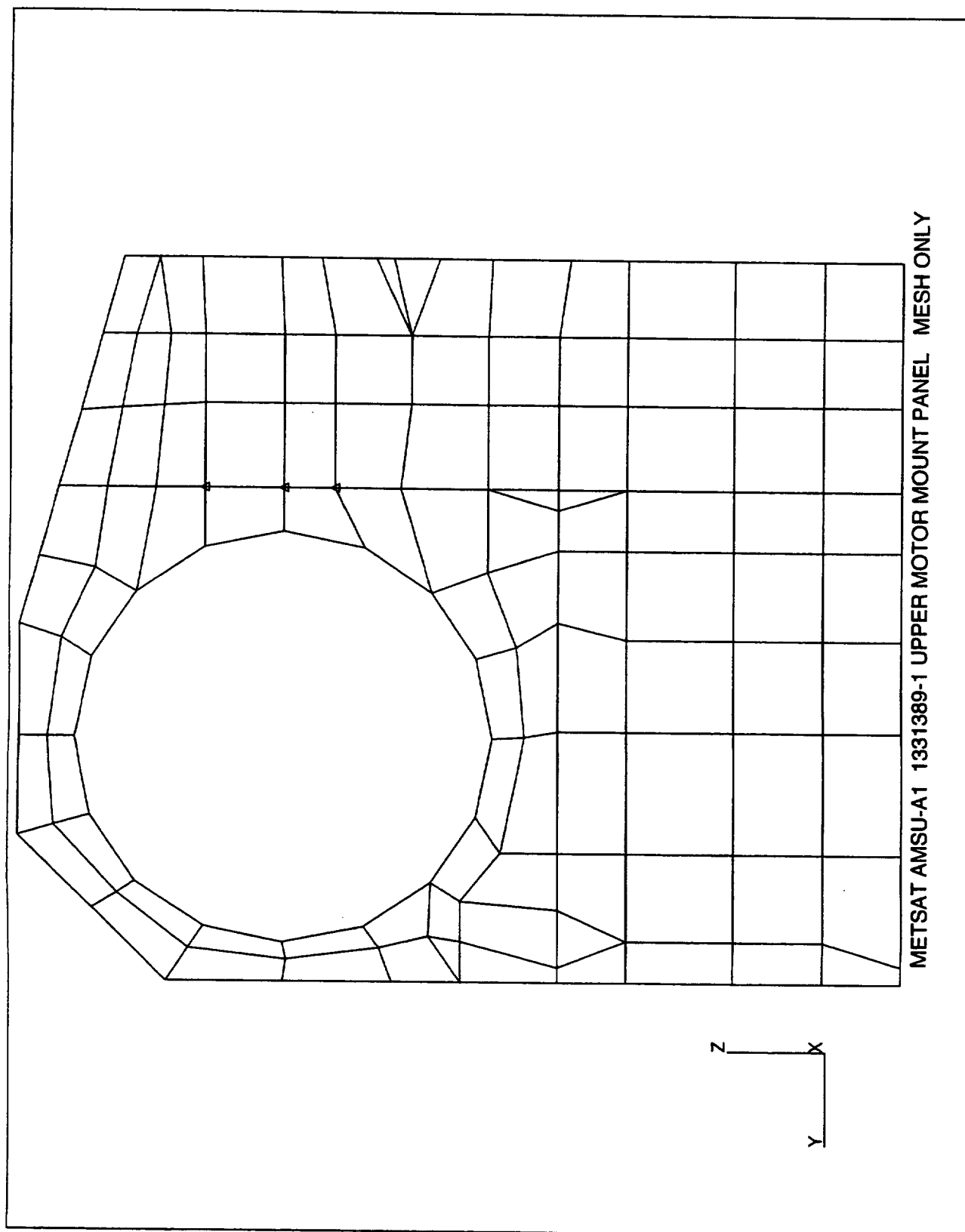
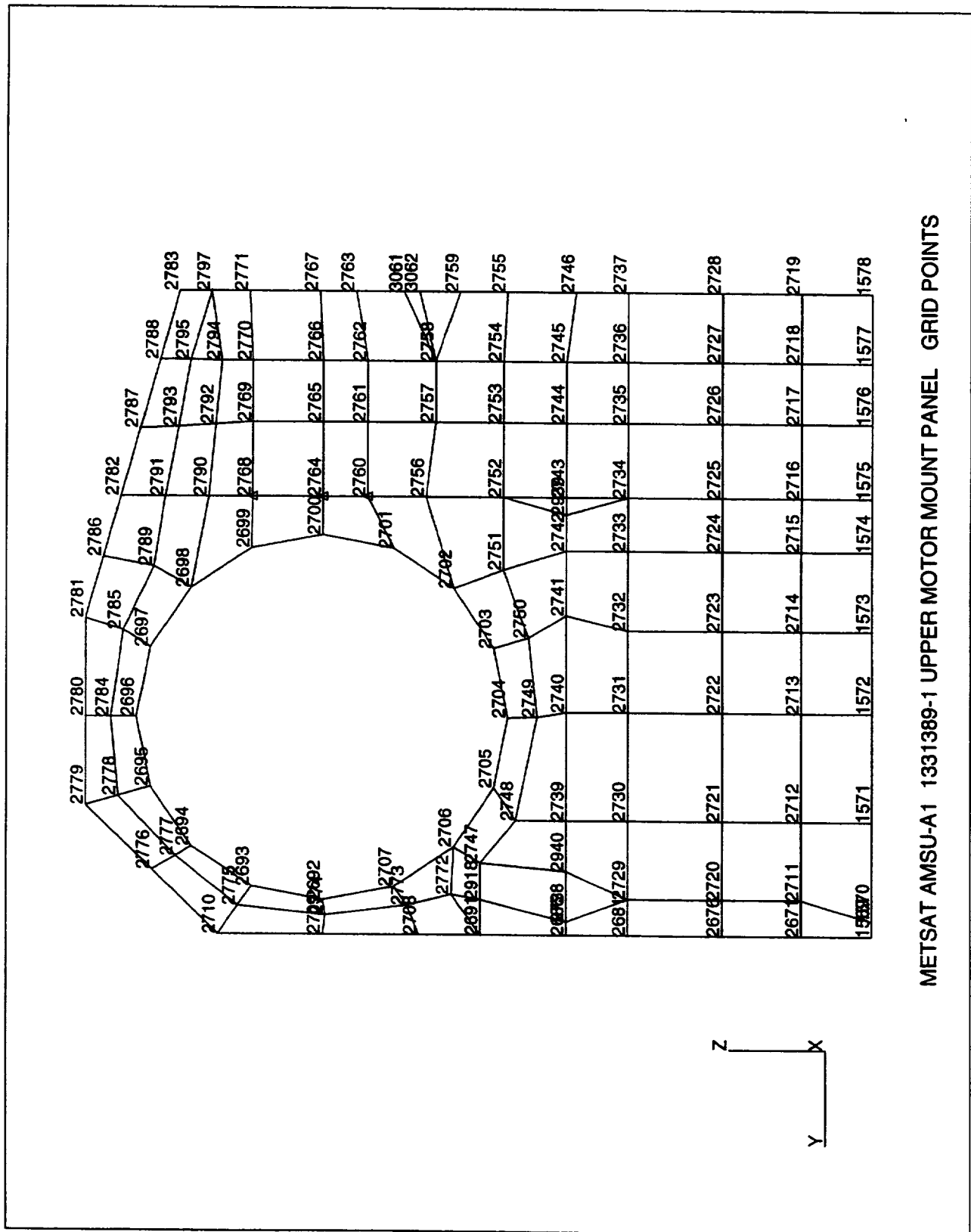


Figure A-11 METSAT AMSU-A1 1331389-1 Upper Motor Mount Panel Mesh Only



METSAT AMSU-A1 1331389-1 UPPER MOTOR MOUNT PANEL GRID POINTS

Figure A-12 METSAT AMSU-A1 1331389-1 Upper Motor Mount Panel Grid Points

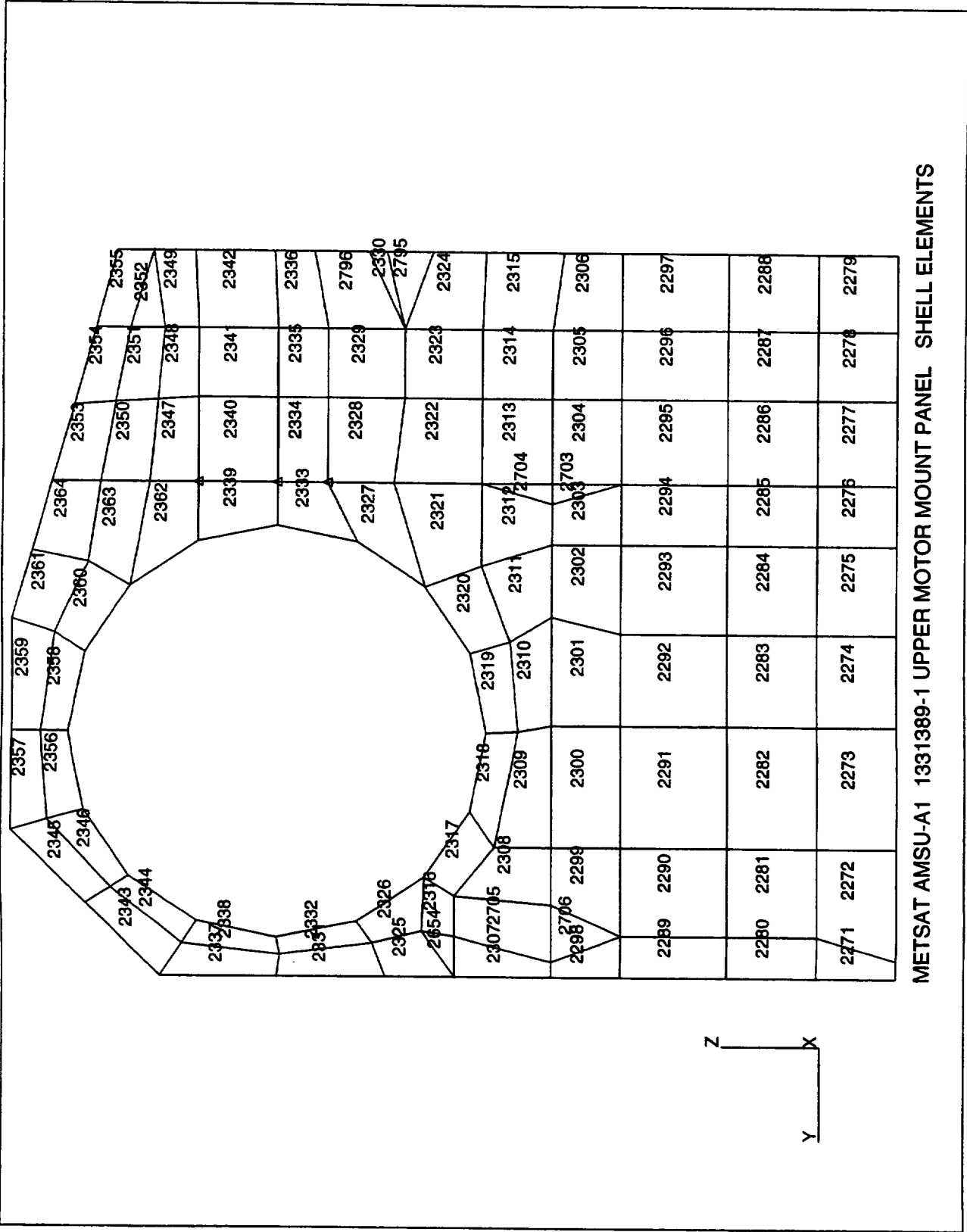


Figure A-13 METSAT AMSU-A1 1331389-1 Upper Motor Mount Panel Shell Elements



Figure A-14 METSAT AMSU-A1 1331389-1 Upper Motor Mount Panel Beam Elements

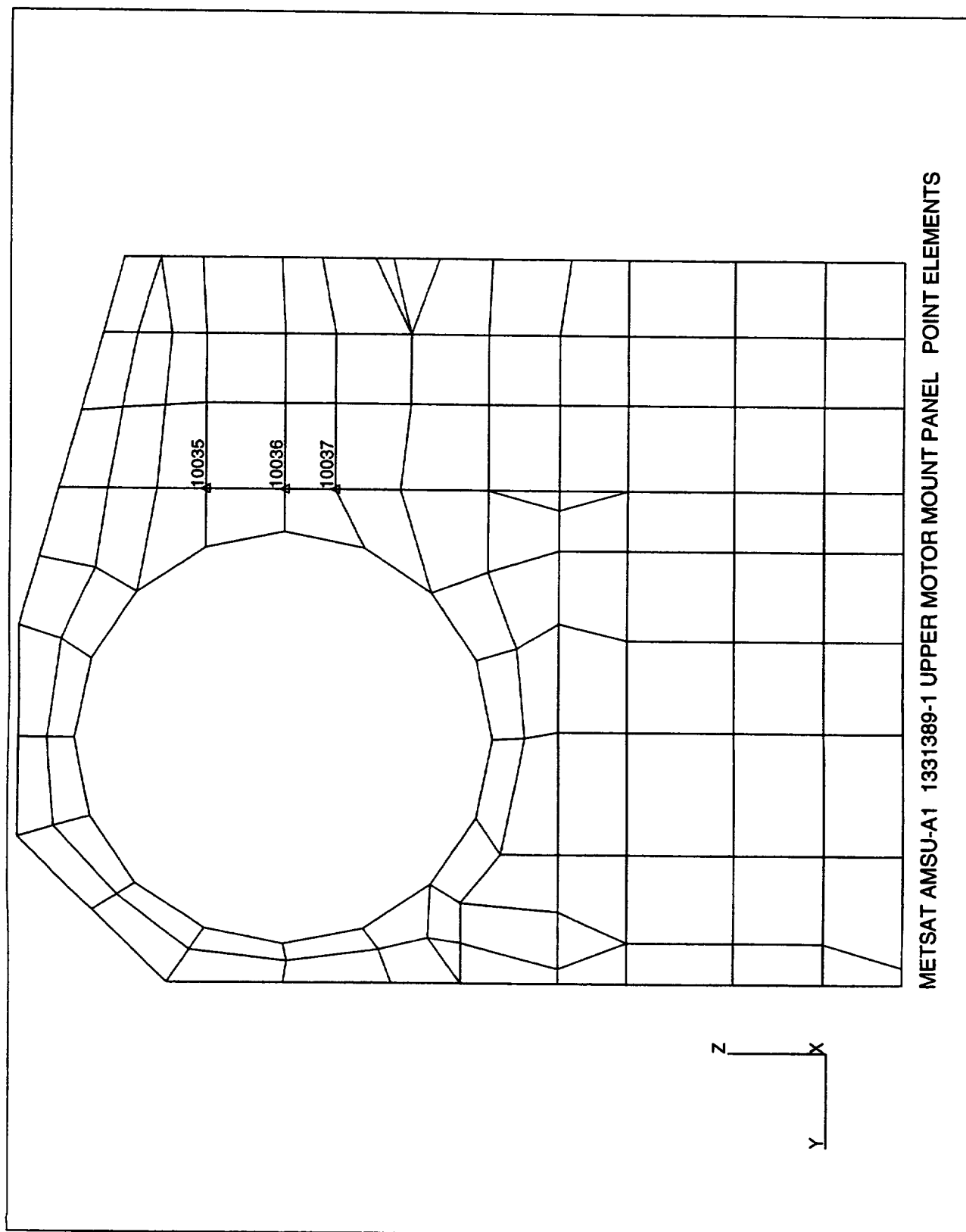


Figure A-15 METSAT AMSU-A1 1331389-1 Upper Motor Mount Panel Point Elements

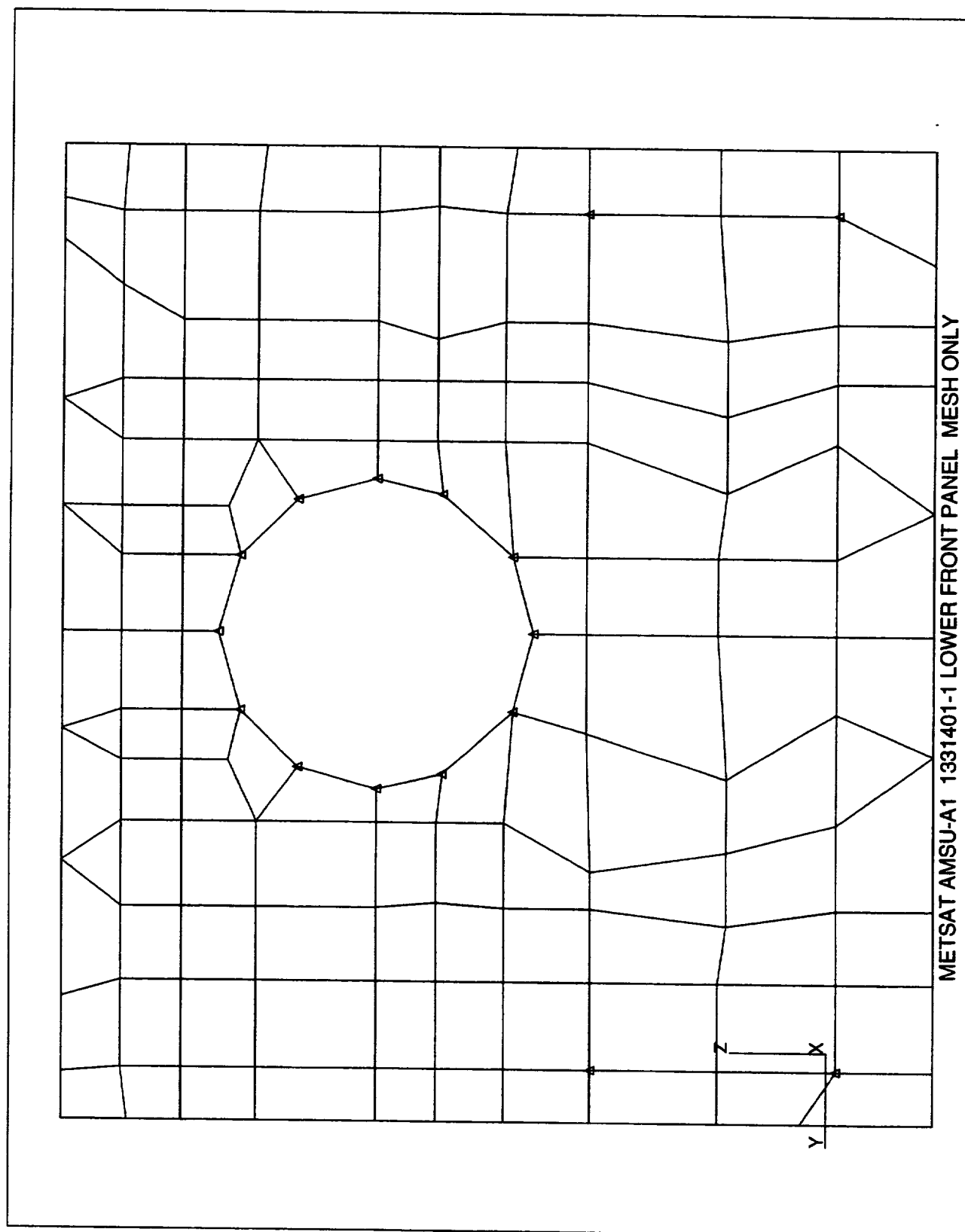
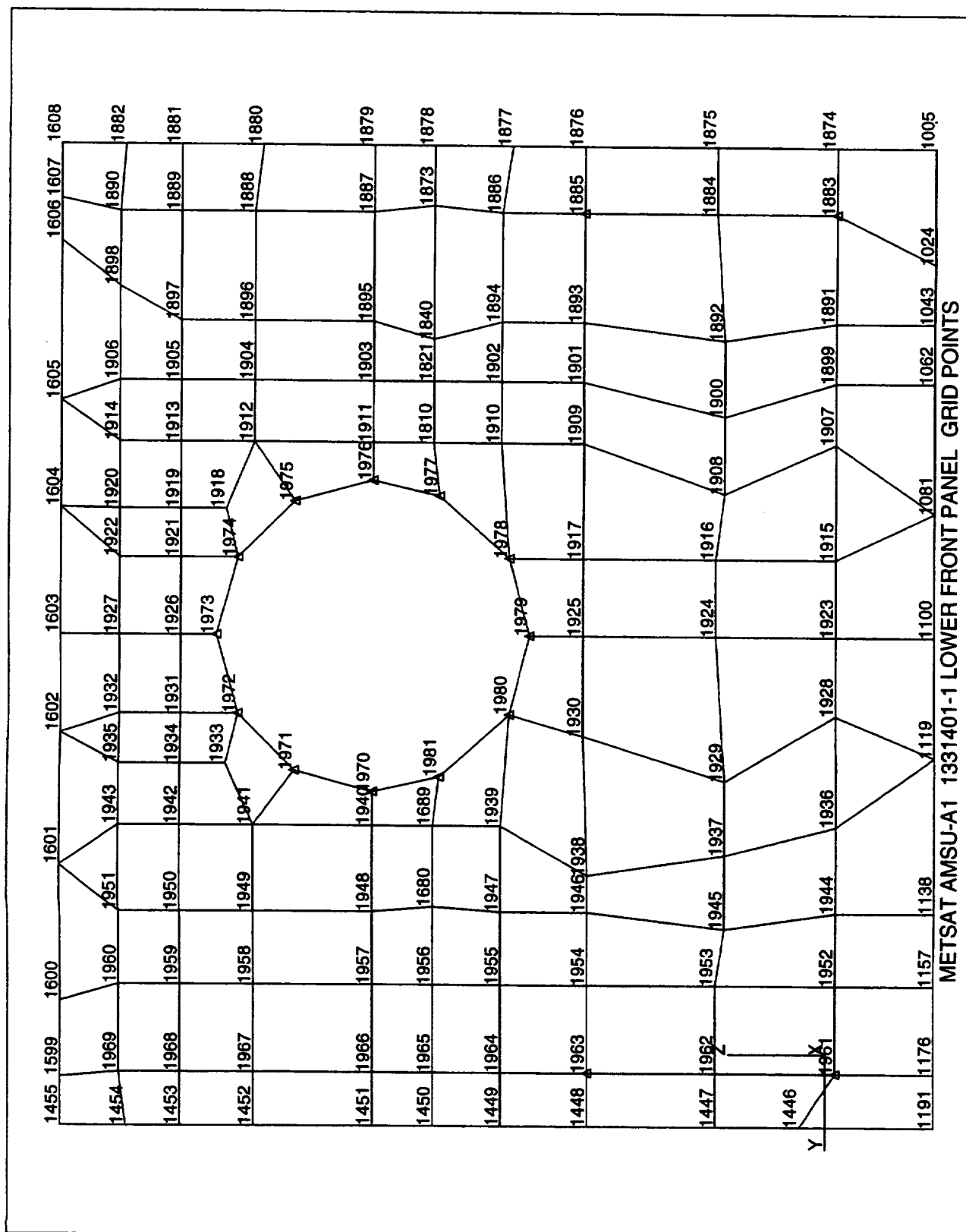


Figure A-16 METSAT AMSU-A1 1331401-1 Lower Front Panel Mesh Only



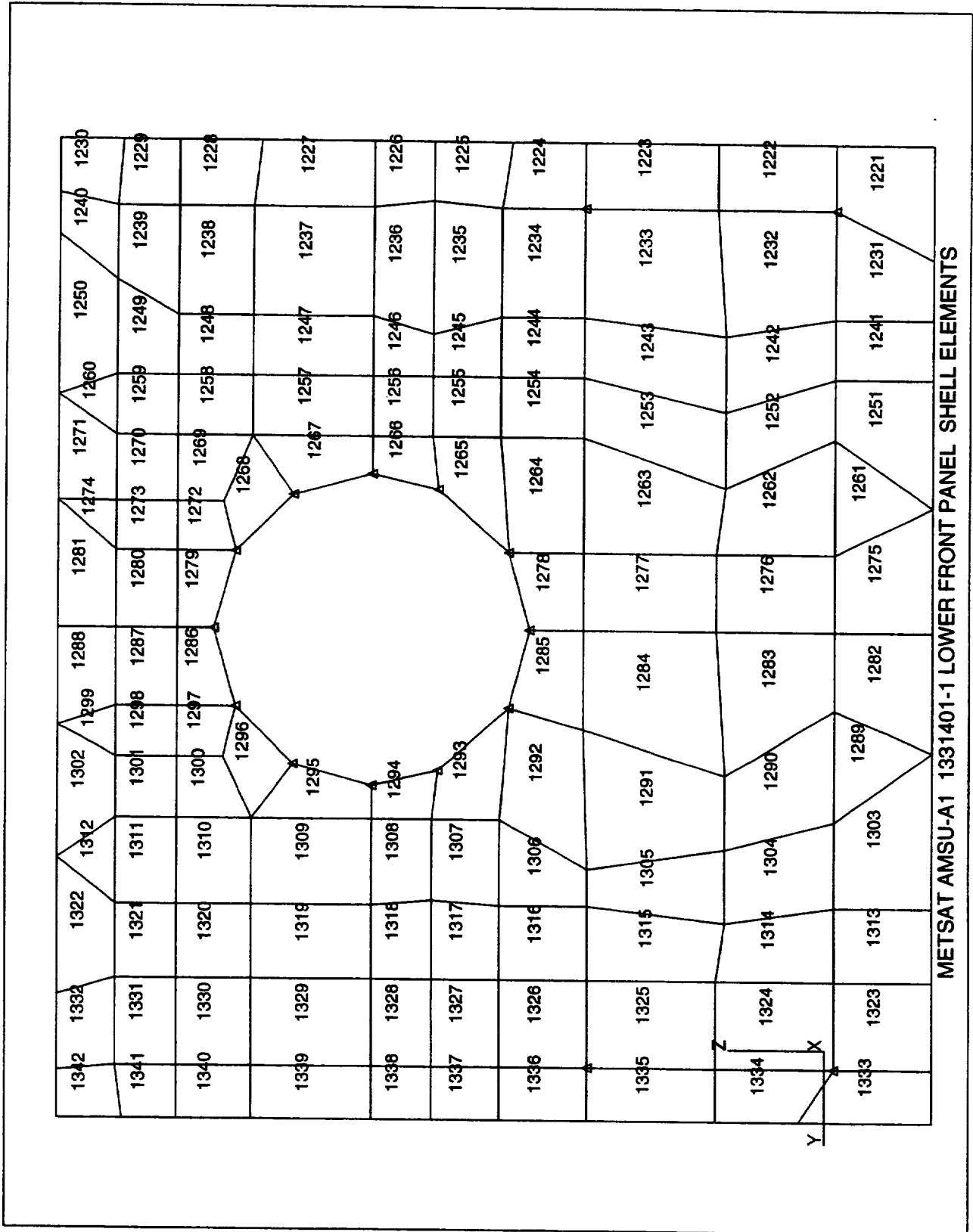


Figure A-18 METSAT AMSU-A1 1331401-1 Lower Front Panel Shell Elements

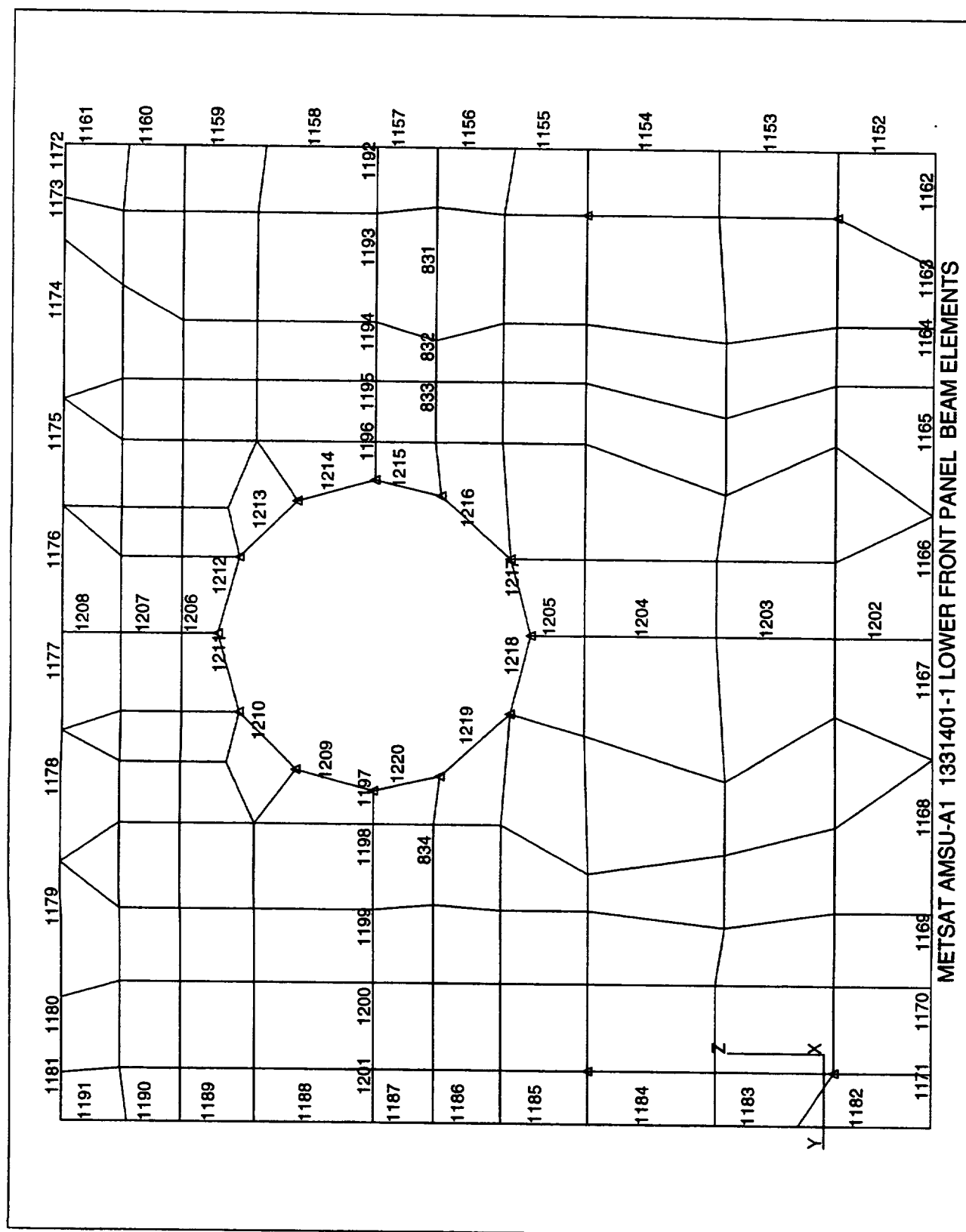


Figure A-19 METSAT AMSU-A1 1331401-1 Lower Front Panel Beam Elements

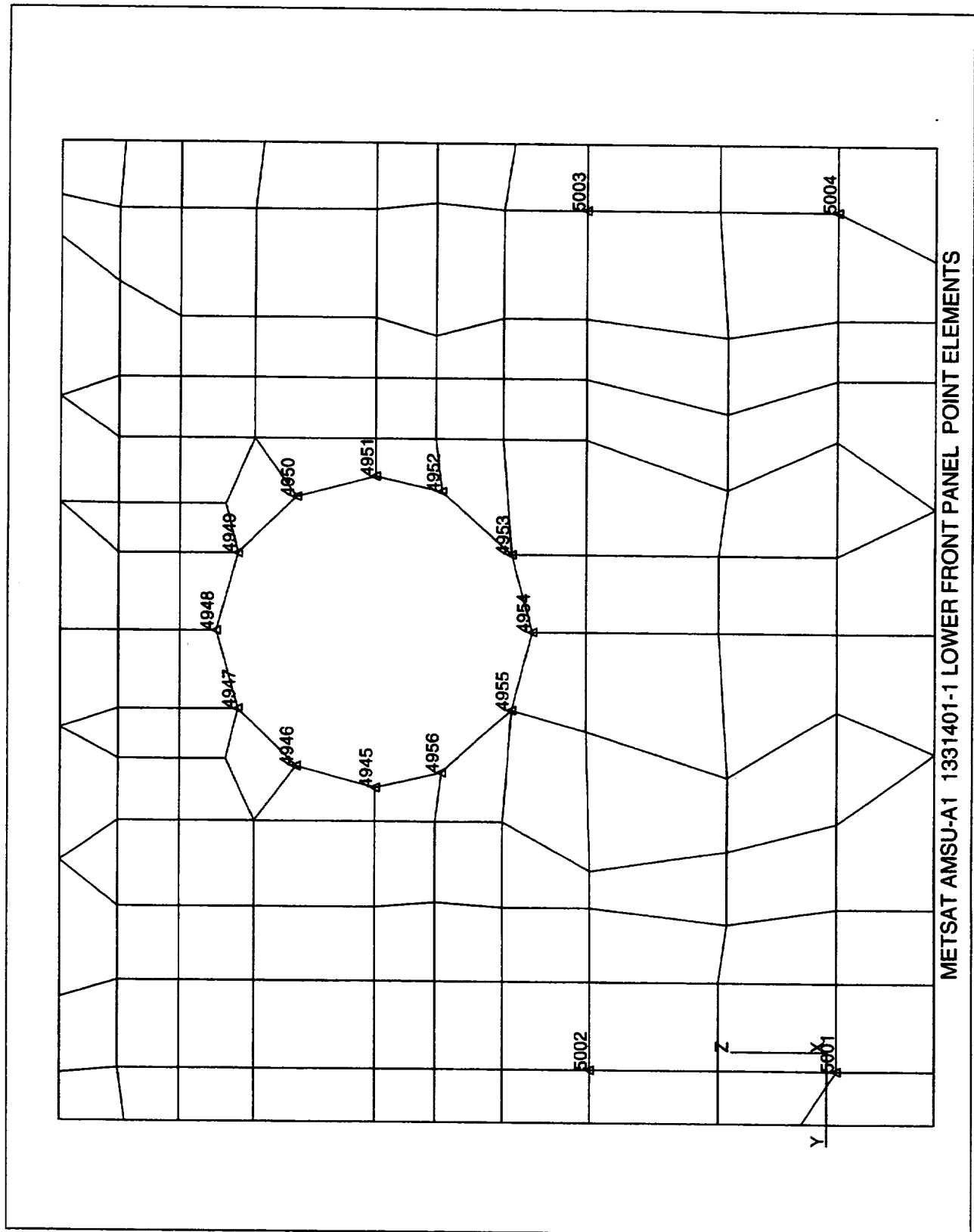


Figure A-20 METSAT AMSU-A1 1331401-1 Lower Front Panel Point Elements

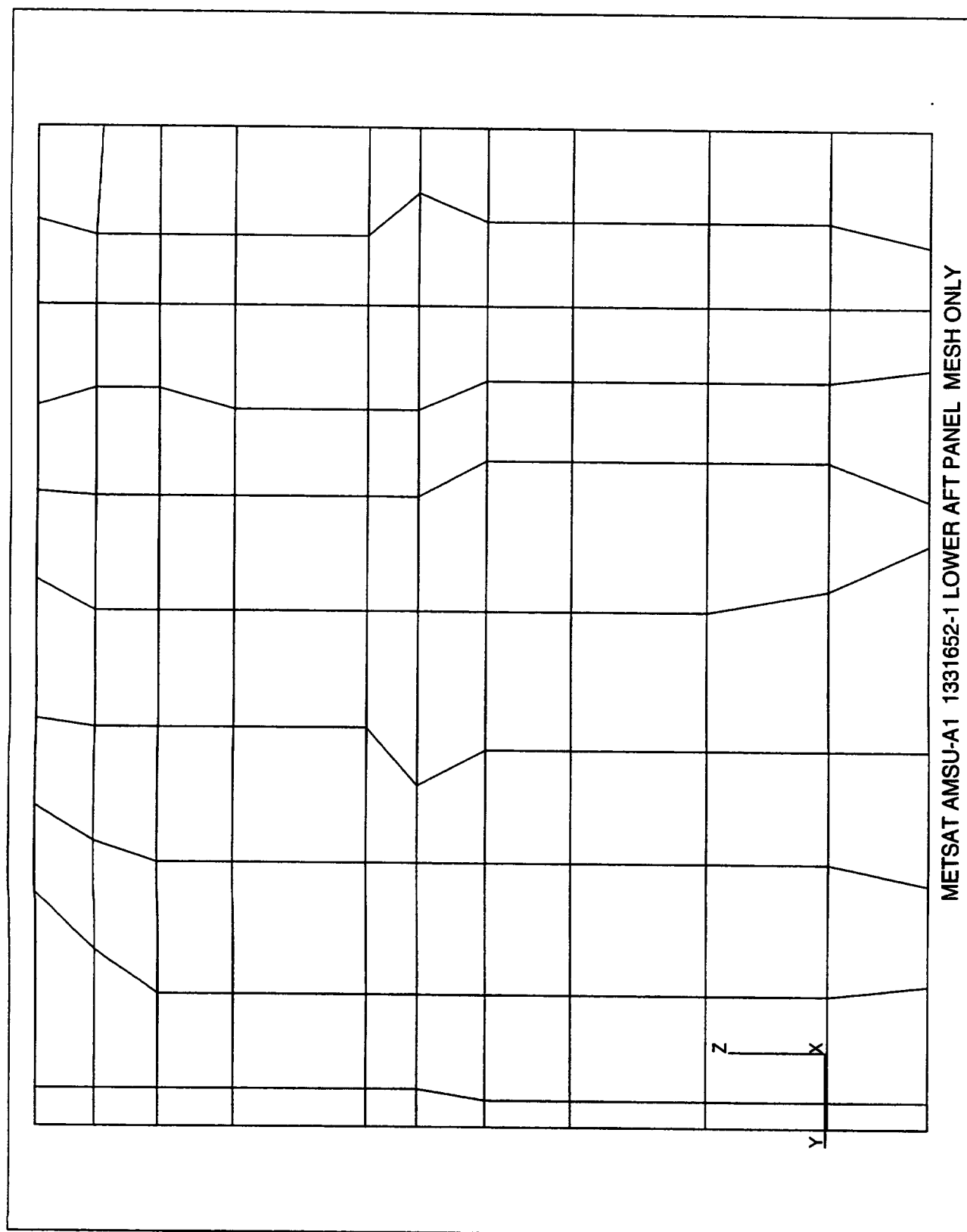


Figure A-21 METSAT AMSU-A1 1331652-1 Lower Aft Panel Mesh Only

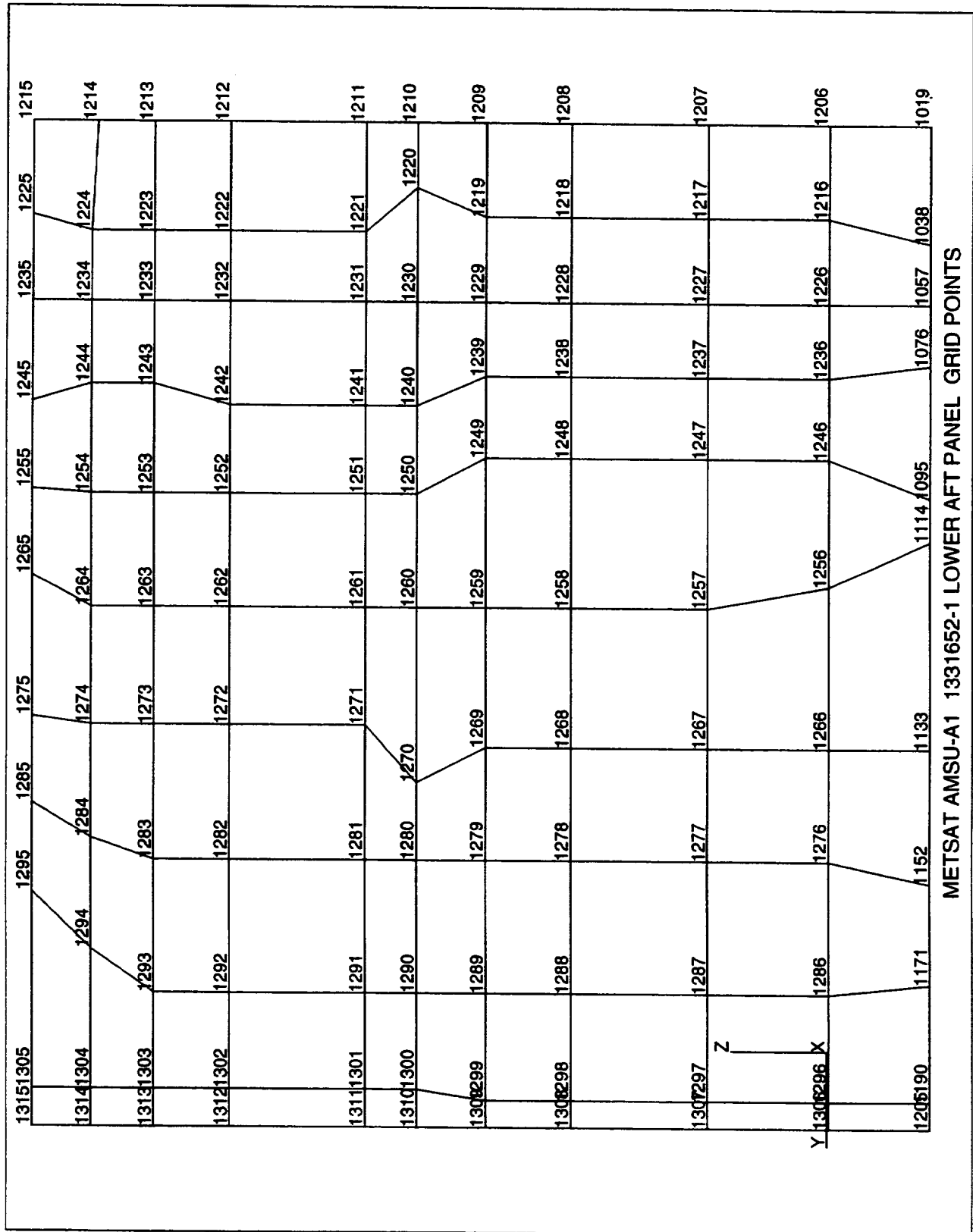


Figure A-22 METSAT AMSU-A1 1331652-1 Lower Aft Panel Grid Points

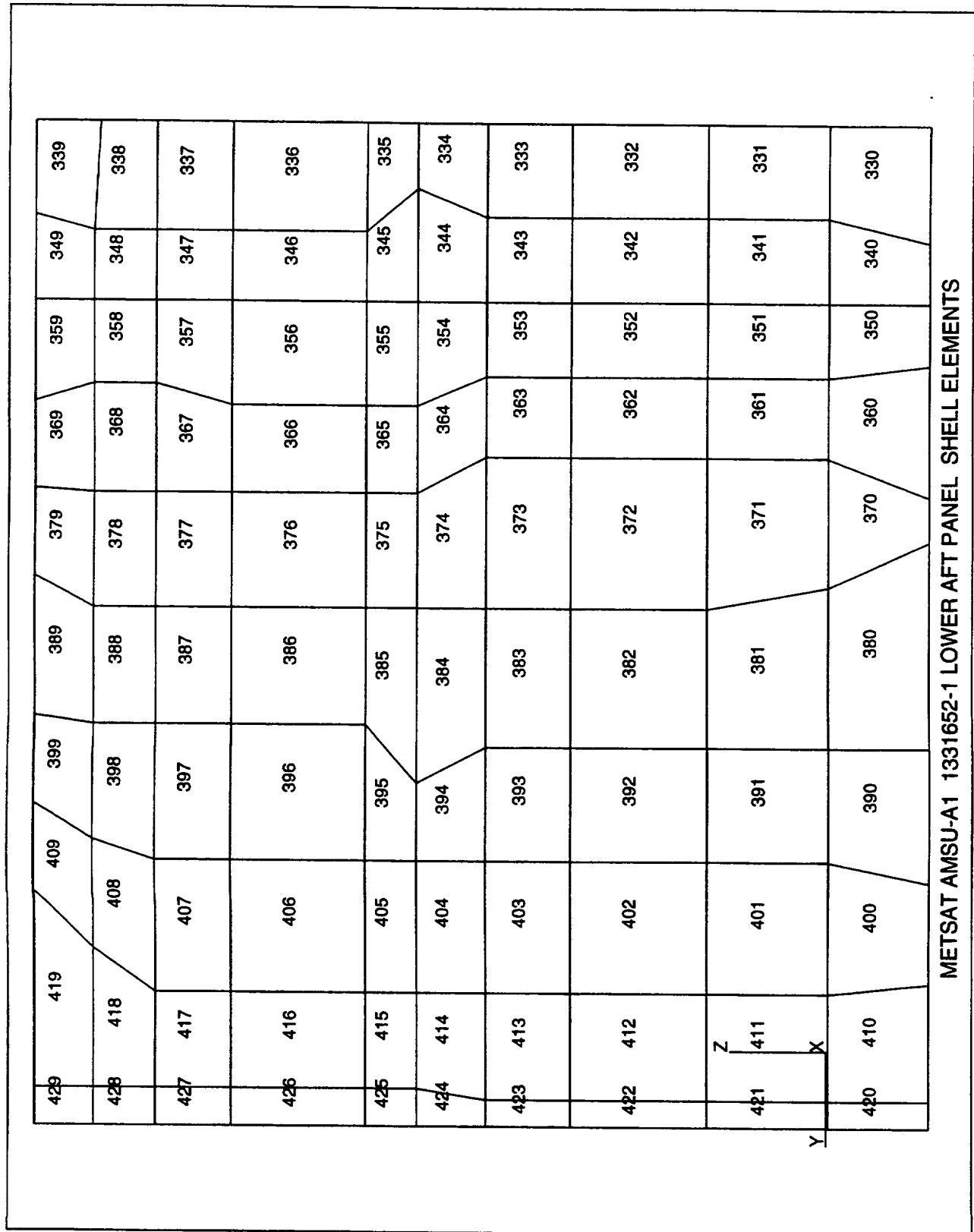


Figure A-23 METSAT AMSU-A1 1331652-1 Lower Aft Panel Shell Elements

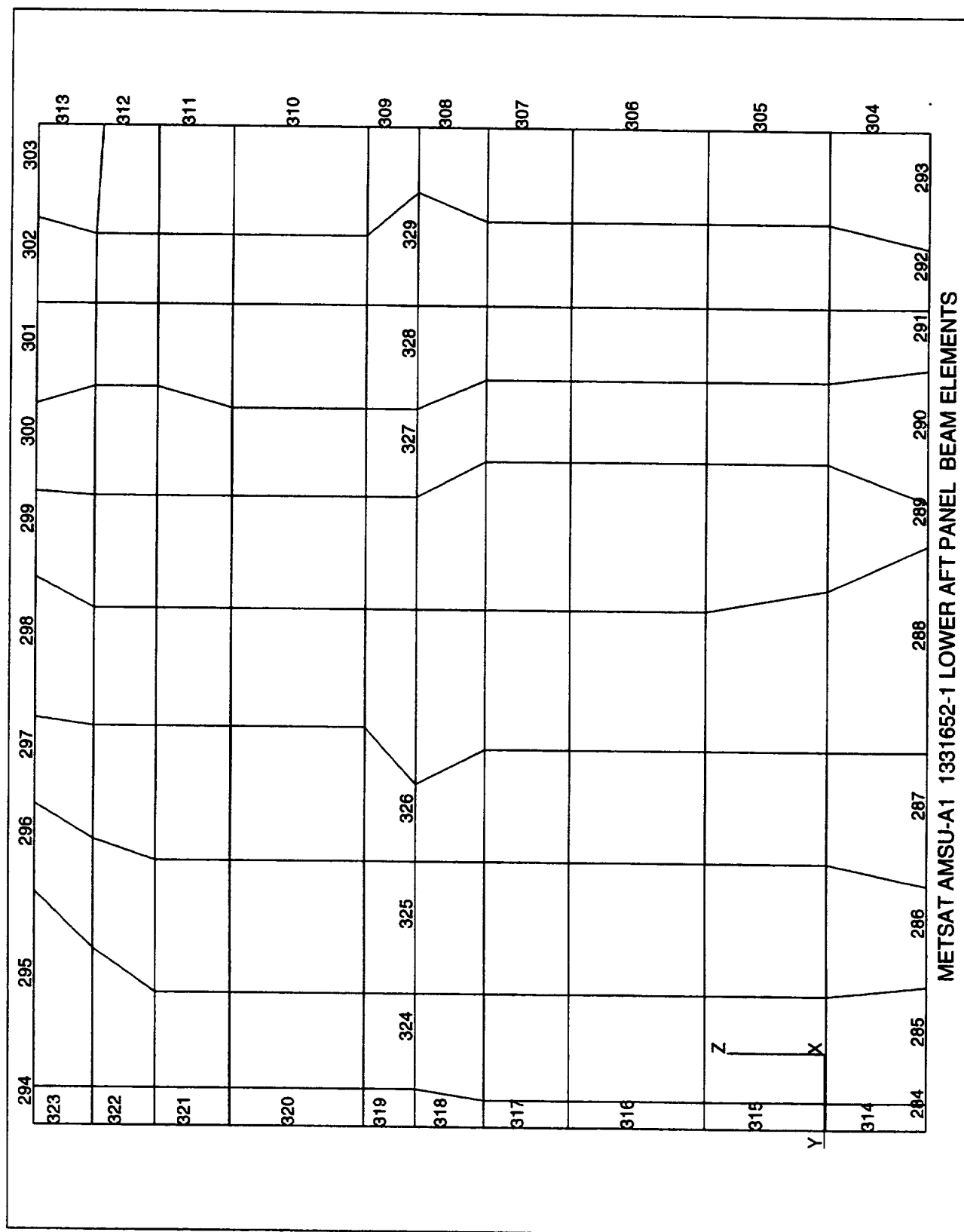


Figure A-24 METSAT AMSU-A1 1331652-1 Lower Aft Panel Beam Elements

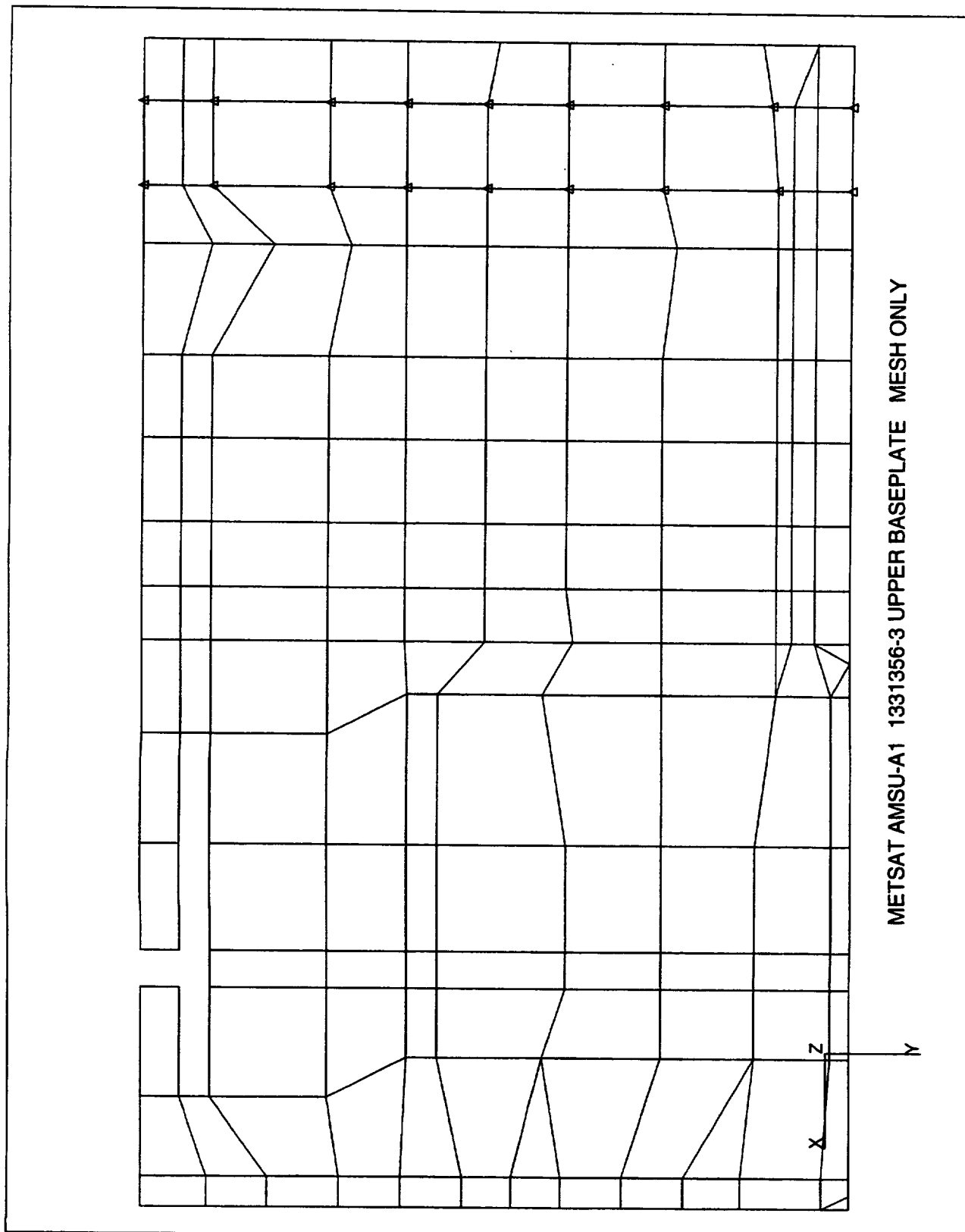
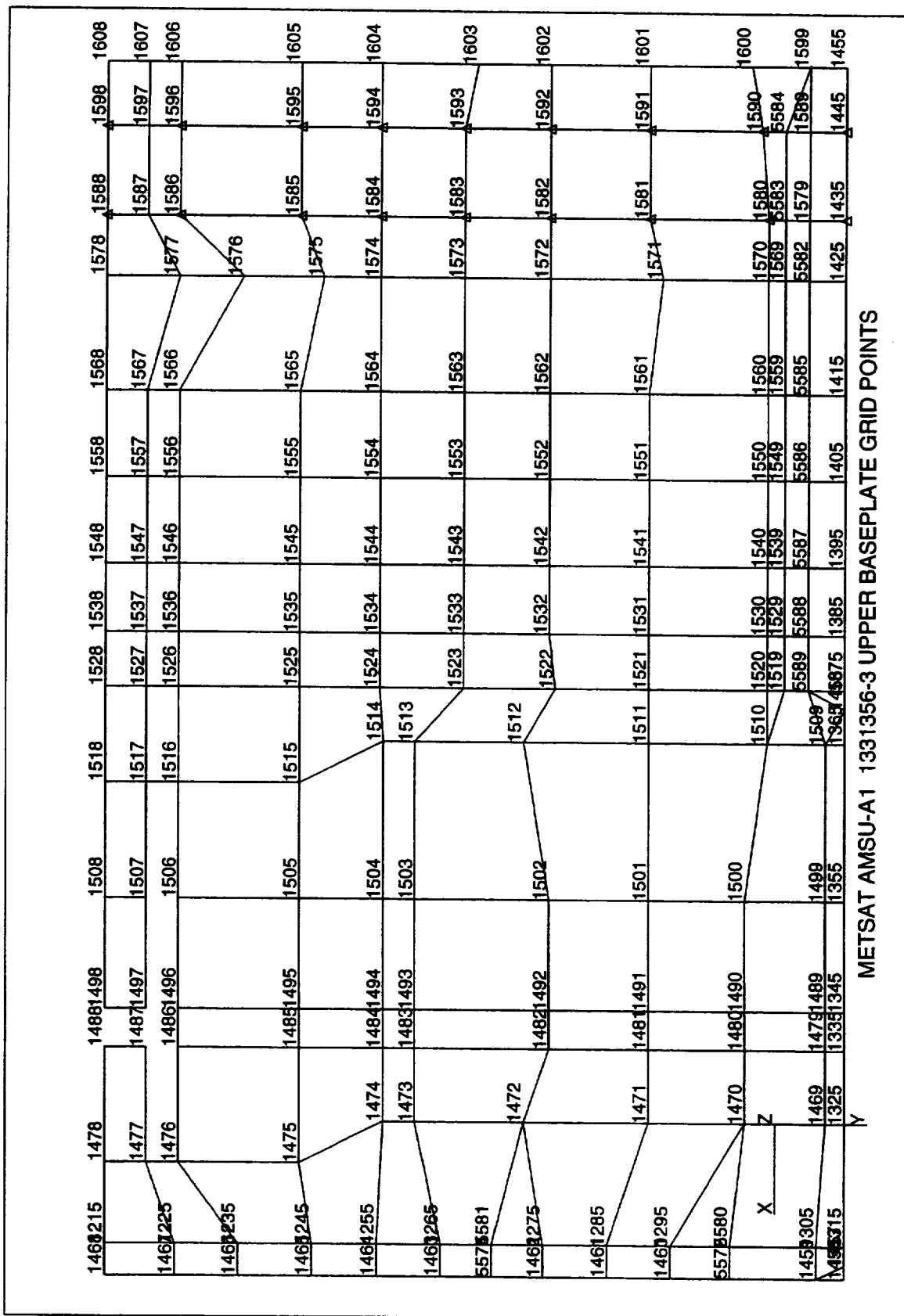


Figure A-25 METSAT AMSU-A1 1331356-3 Upper Baseplate Mesh Only



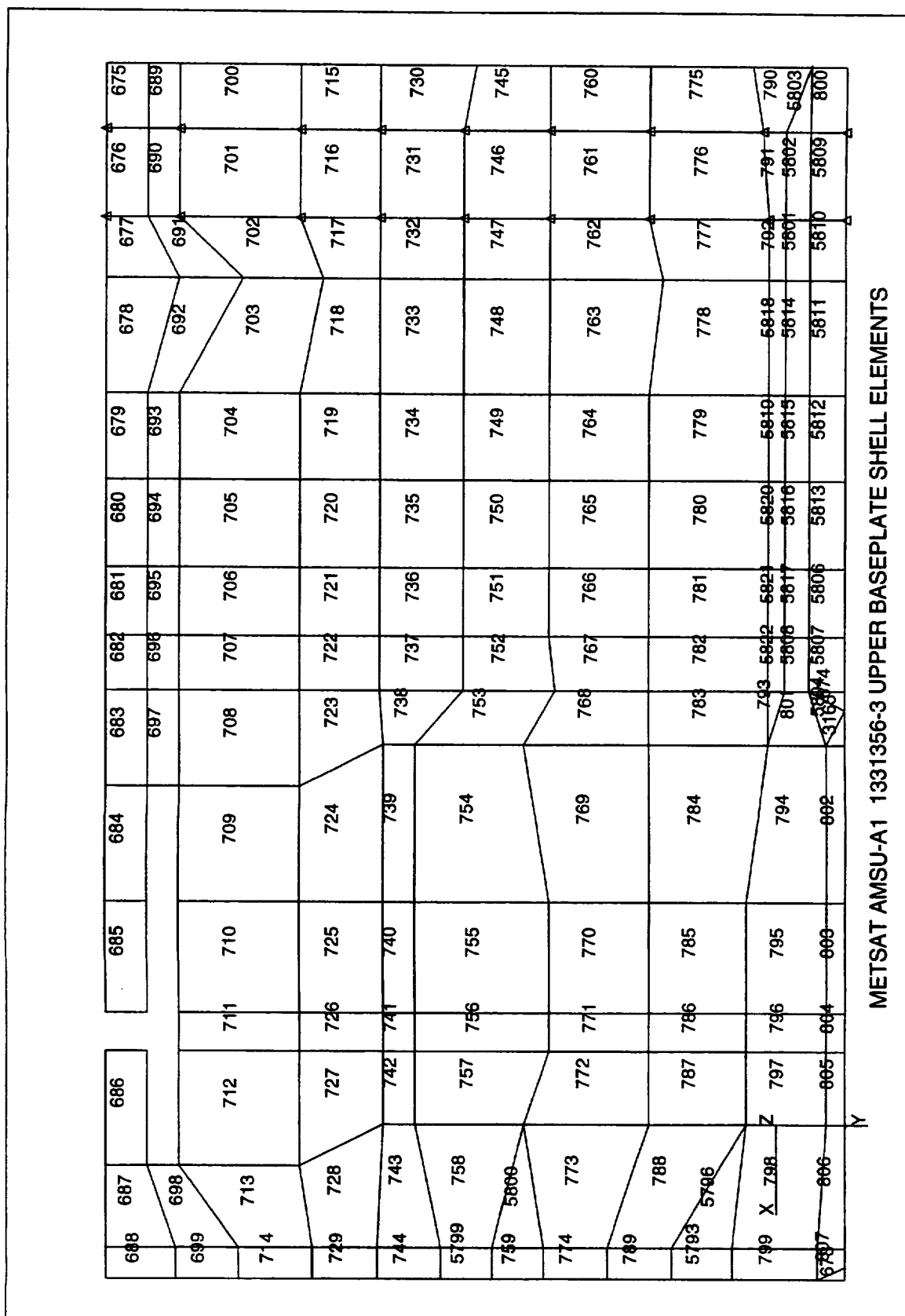


Figure A-27 METSAT AMSU-A1 1331356-3 Upper Baseplate Shell Elements

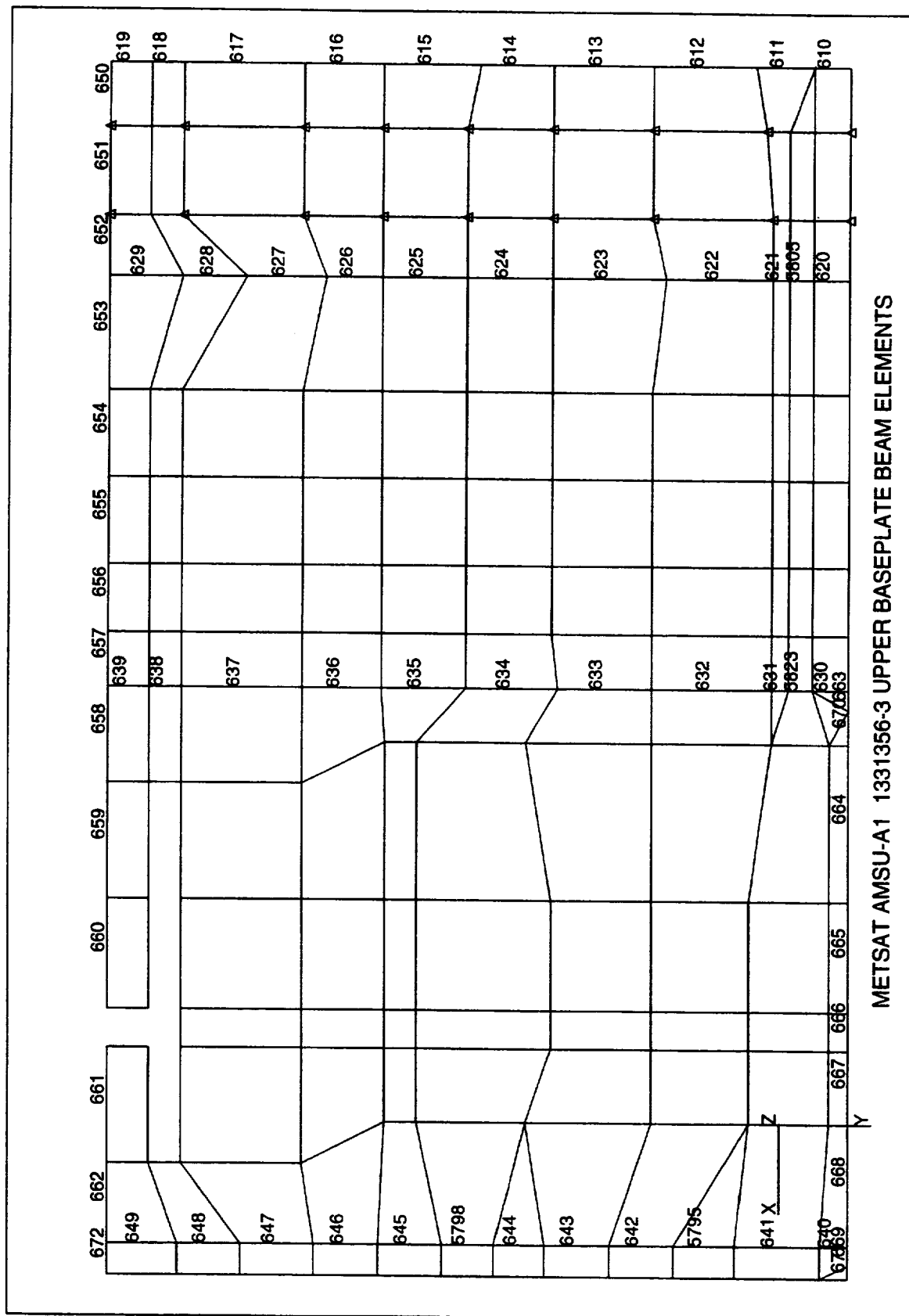


Figure A-28 METSAT AMSU-A1 1331356-3 Upper Baseplate Beam Elements

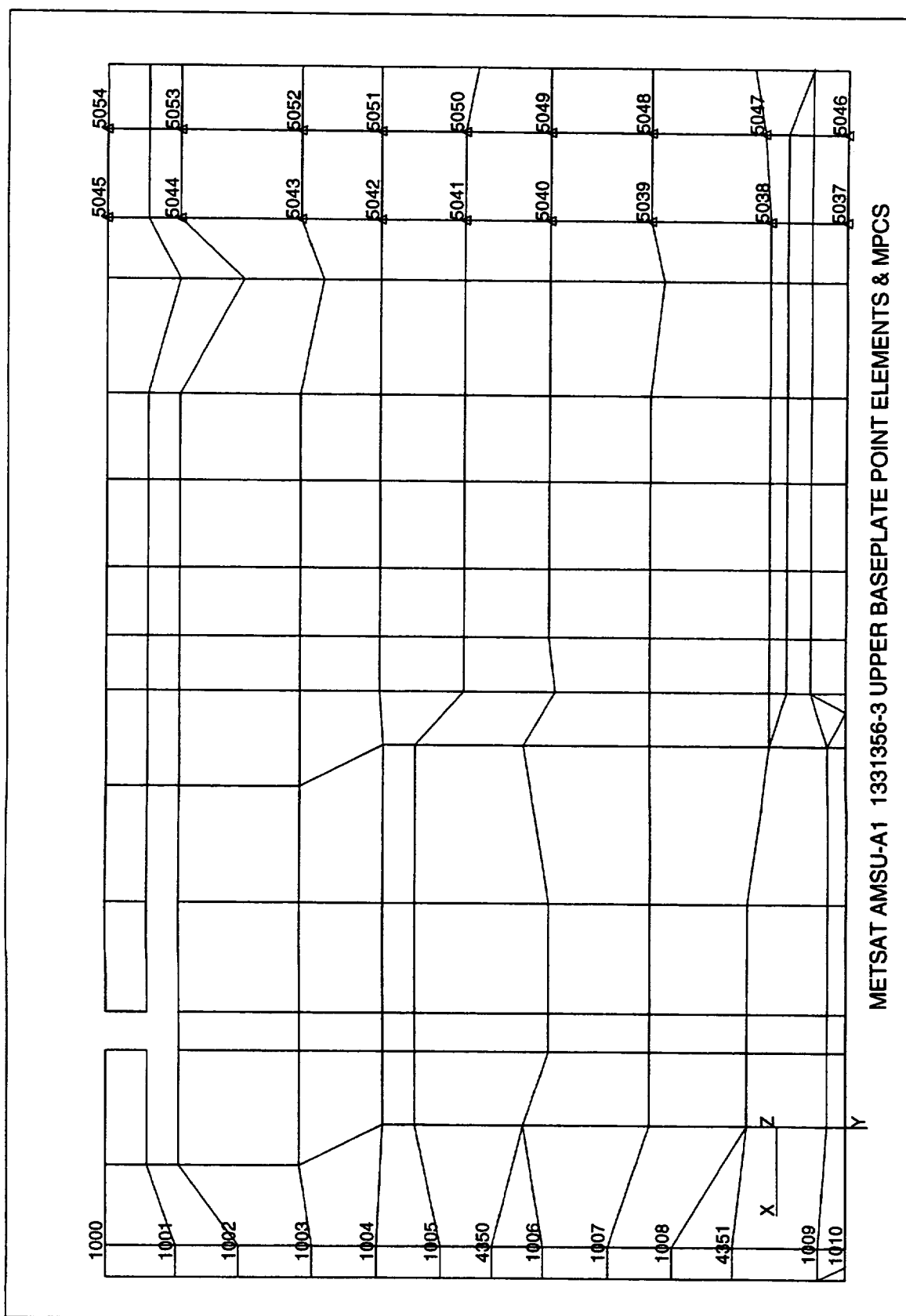


Figure A-29 METSAT AMSU-A1 1331356-3 Upper Baseplate Point Elements & MPCs

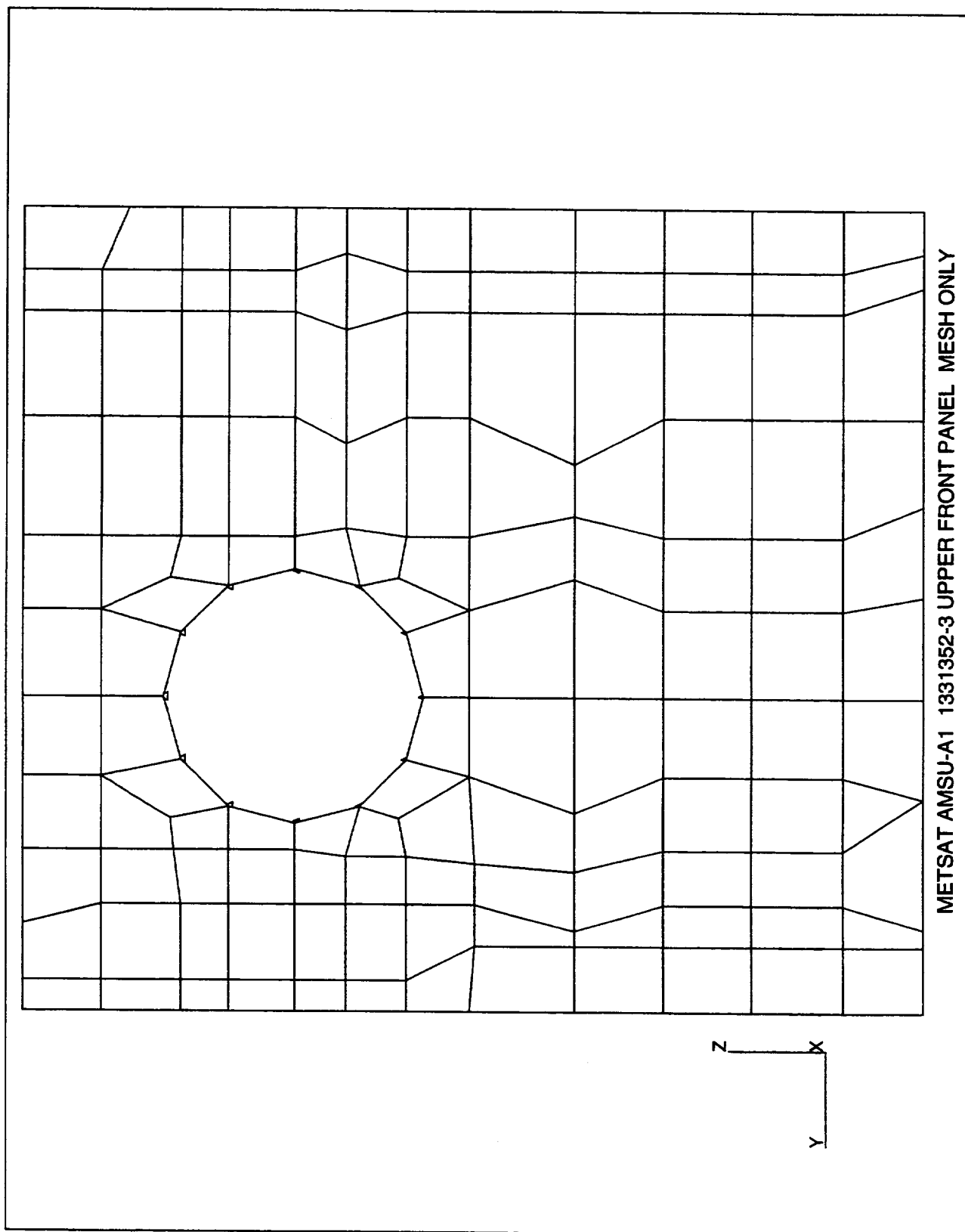


Figure A-30 METSAT AMSU-A1 1331352-3 Upper Front Panel Mesh Only

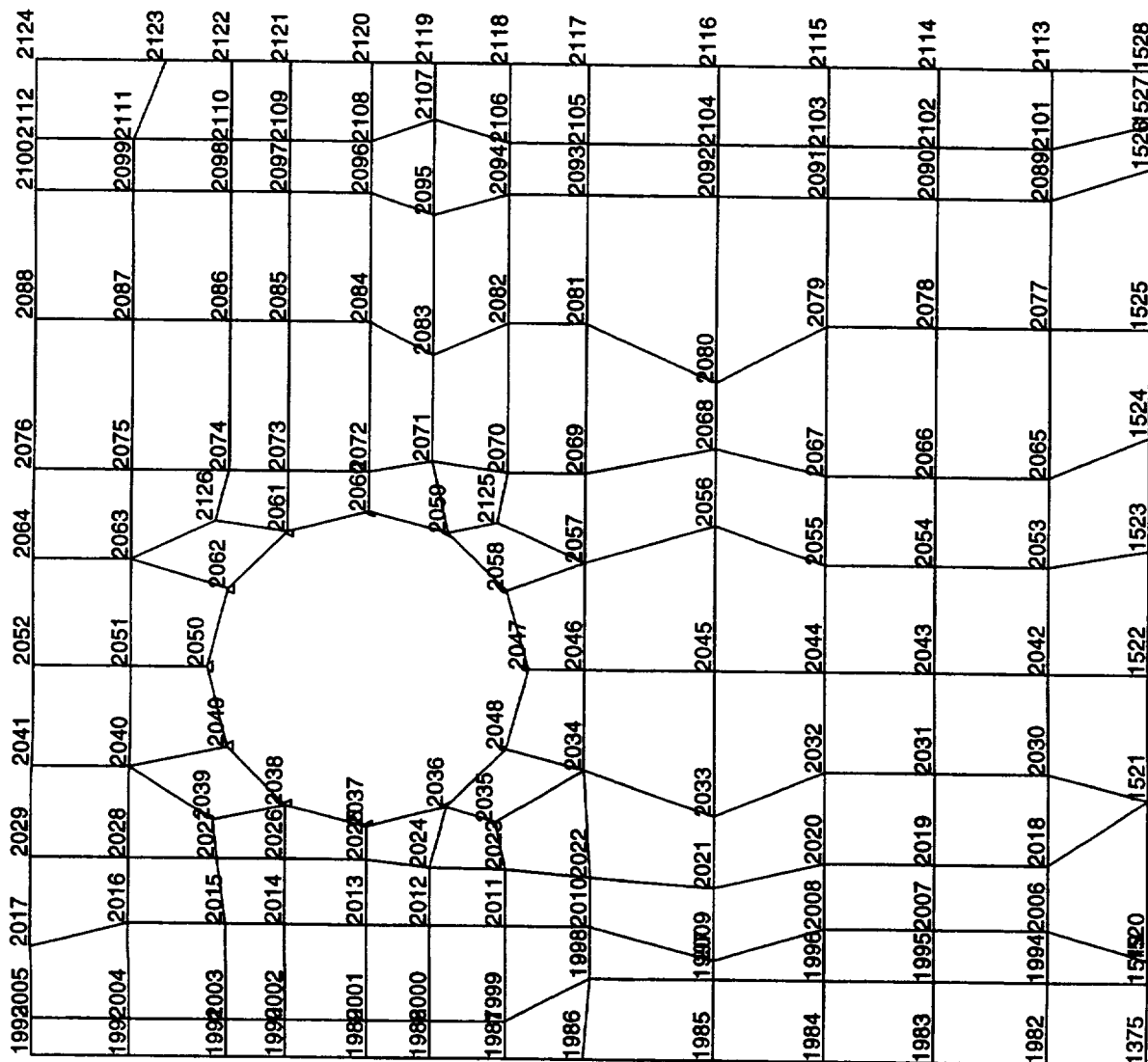


Figure A-31 METSAT AMSU-A1 1331352-3 Upper Front Panel Grid Points

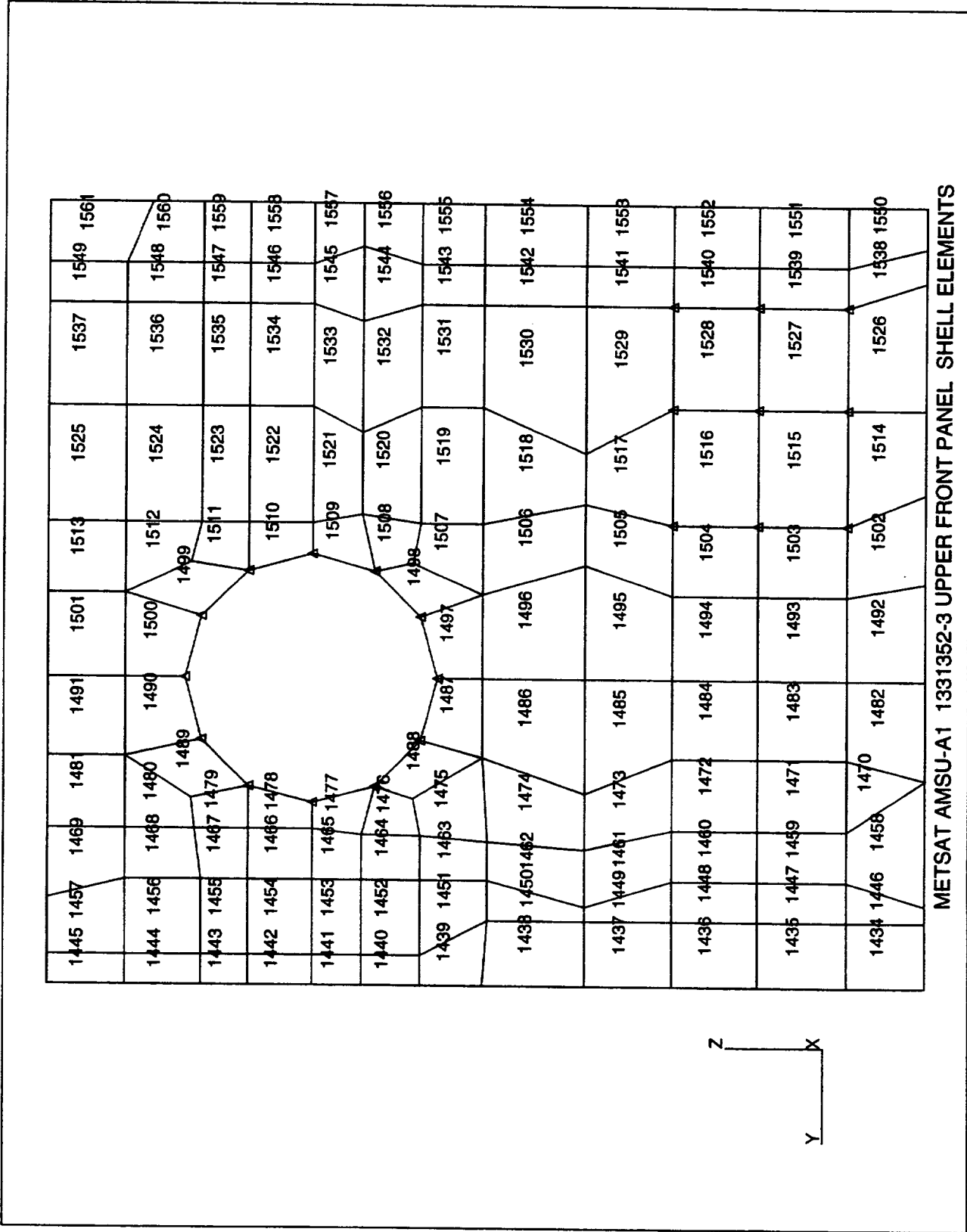


Figure A-32 METSAT AMSU-A1 1331352-3 Upper Front Panel Shell Elements

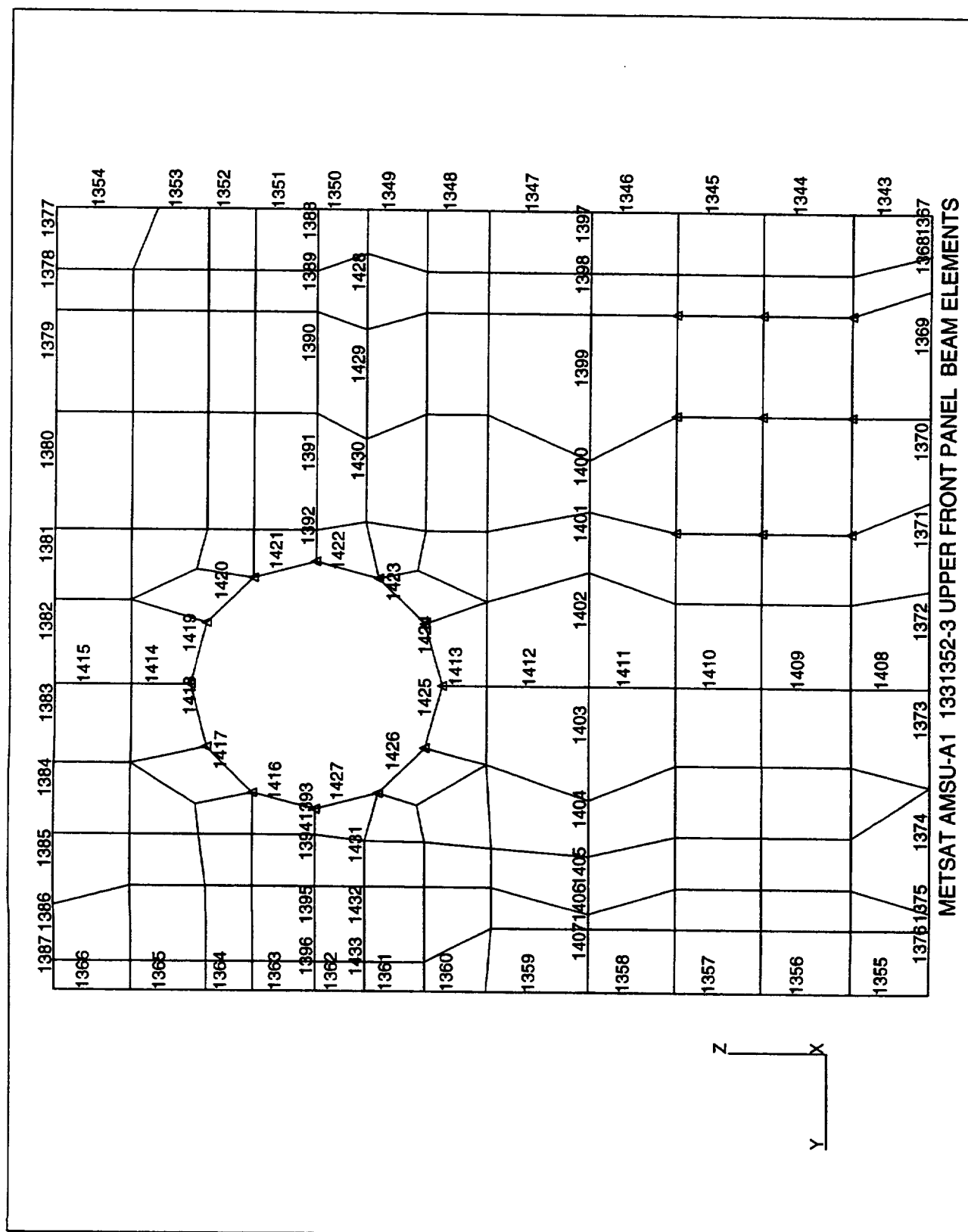


Figure A-33 METSAT AMSU-A1 1331352-3 Upper Front Panel Beam Elements

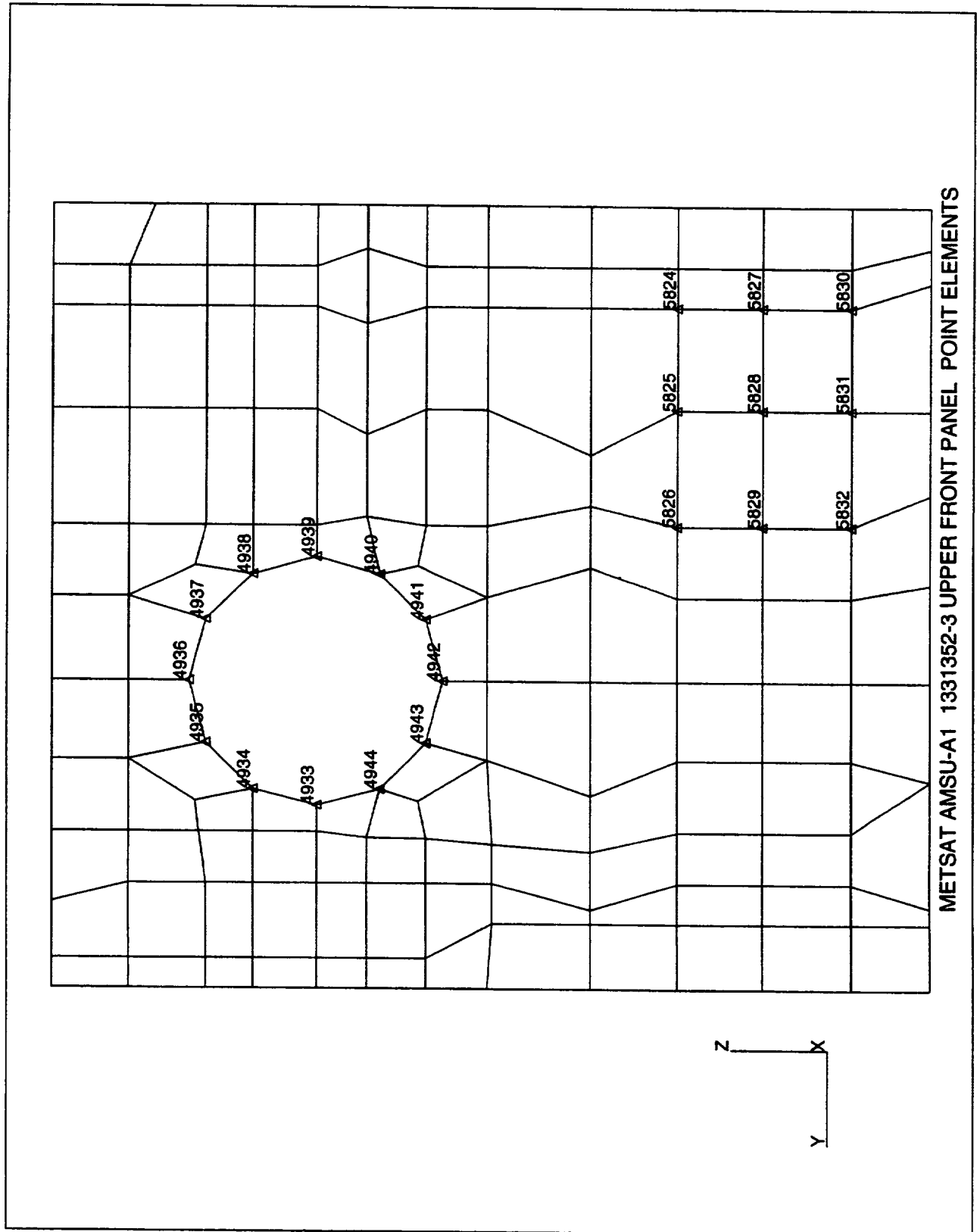


Figure A-34 METSAT AMSU-A1 1331352-3 Upper Front Panel Point Elements

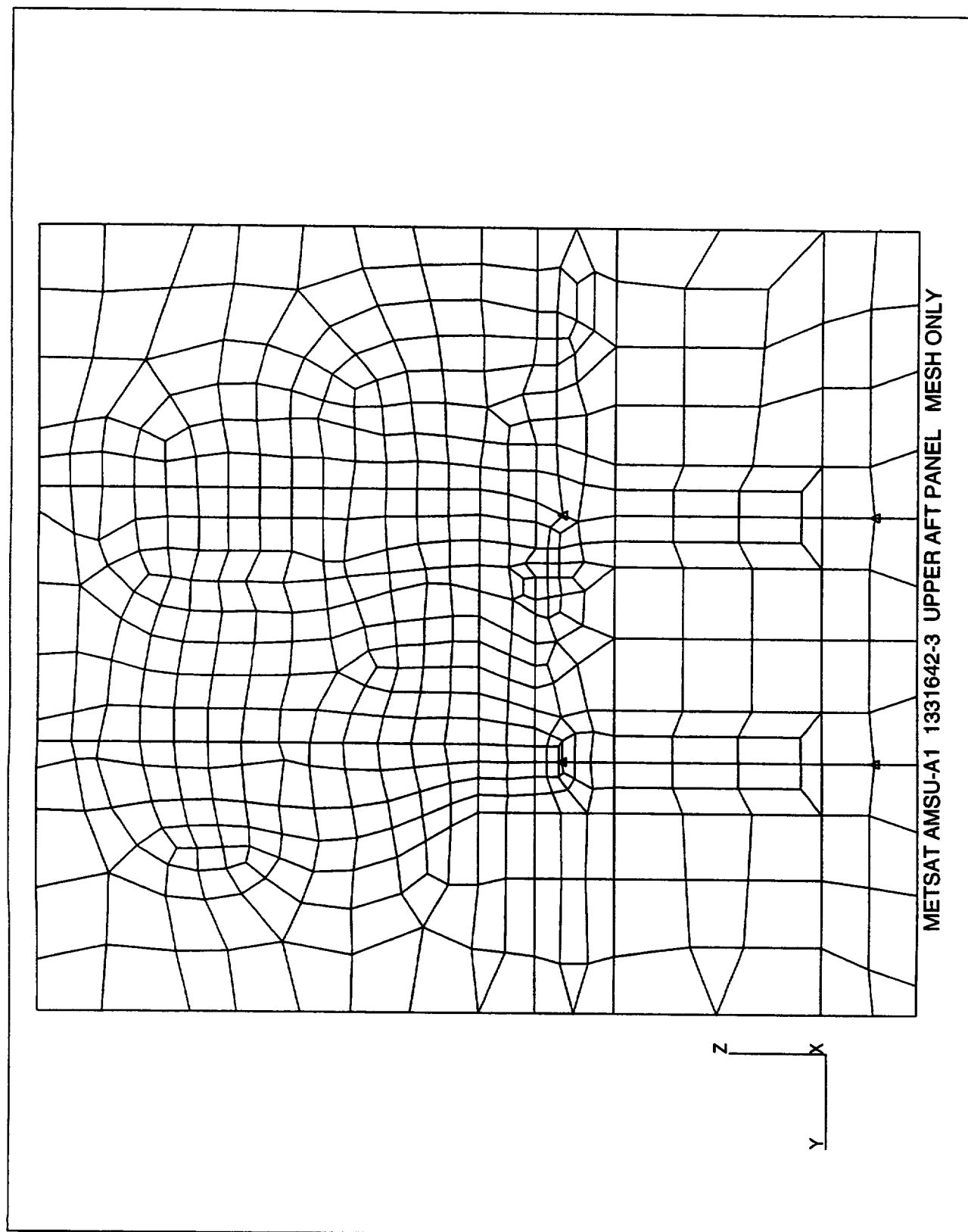


Figure A-35 METSAT AMSU-A1 1331642-3 Upper Aft Panel Mesh Only

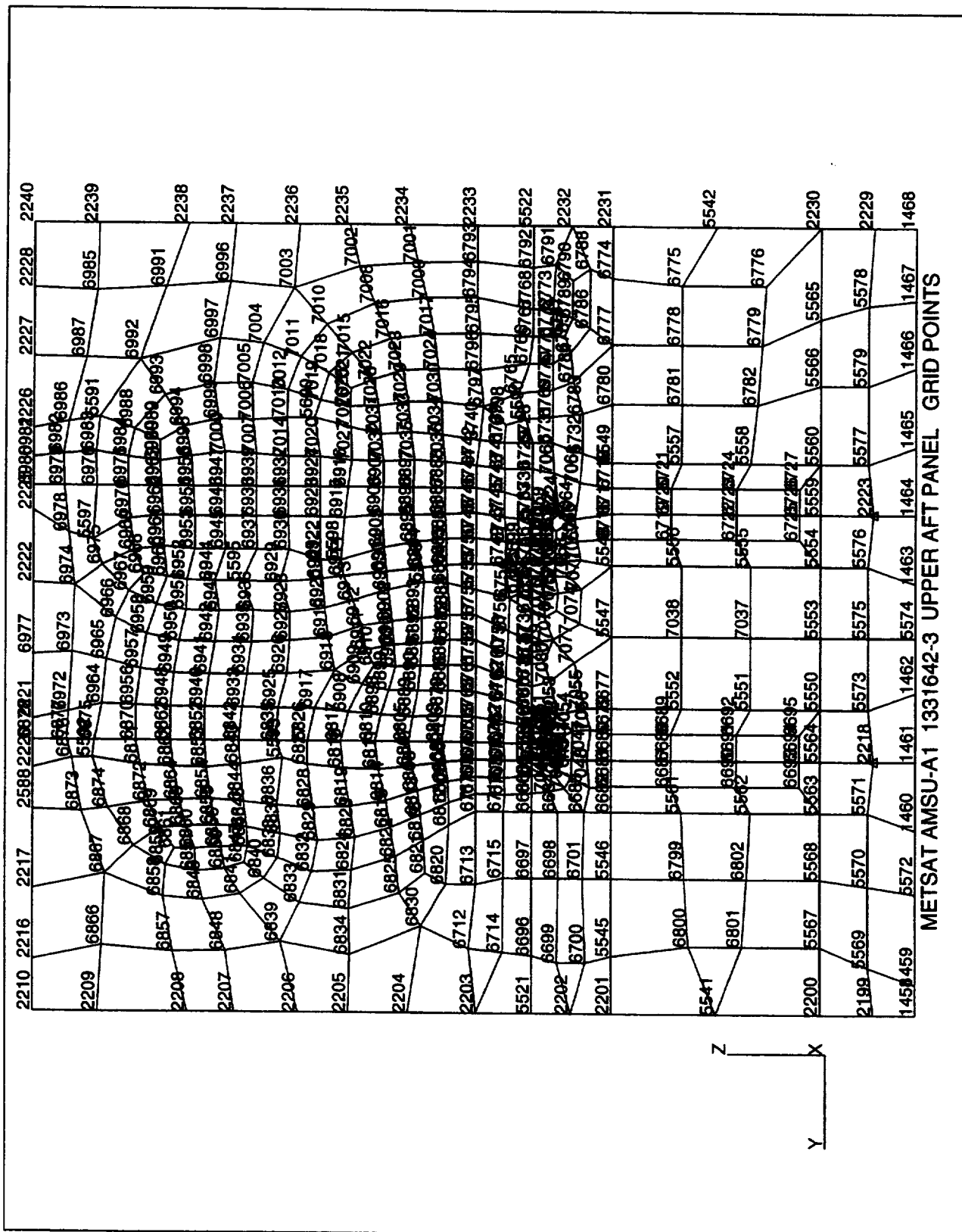


Figure A-36 METSAT AMSU-A1 1331642-3 Upper Aft Panel Grid Points

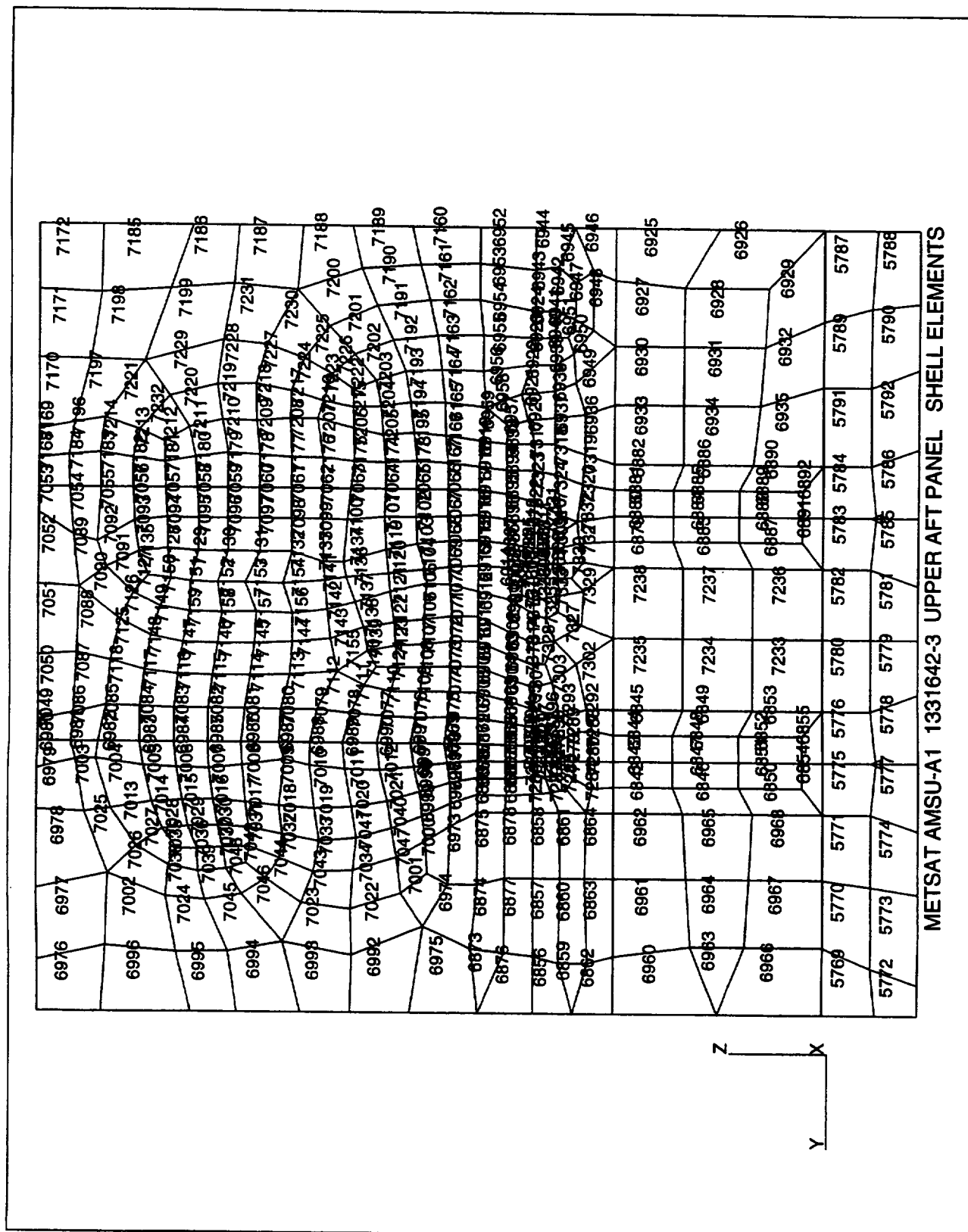


Figure A-37 METSAT AMSU-A1 1331642-3 Upper Aft Panel Shell Elements

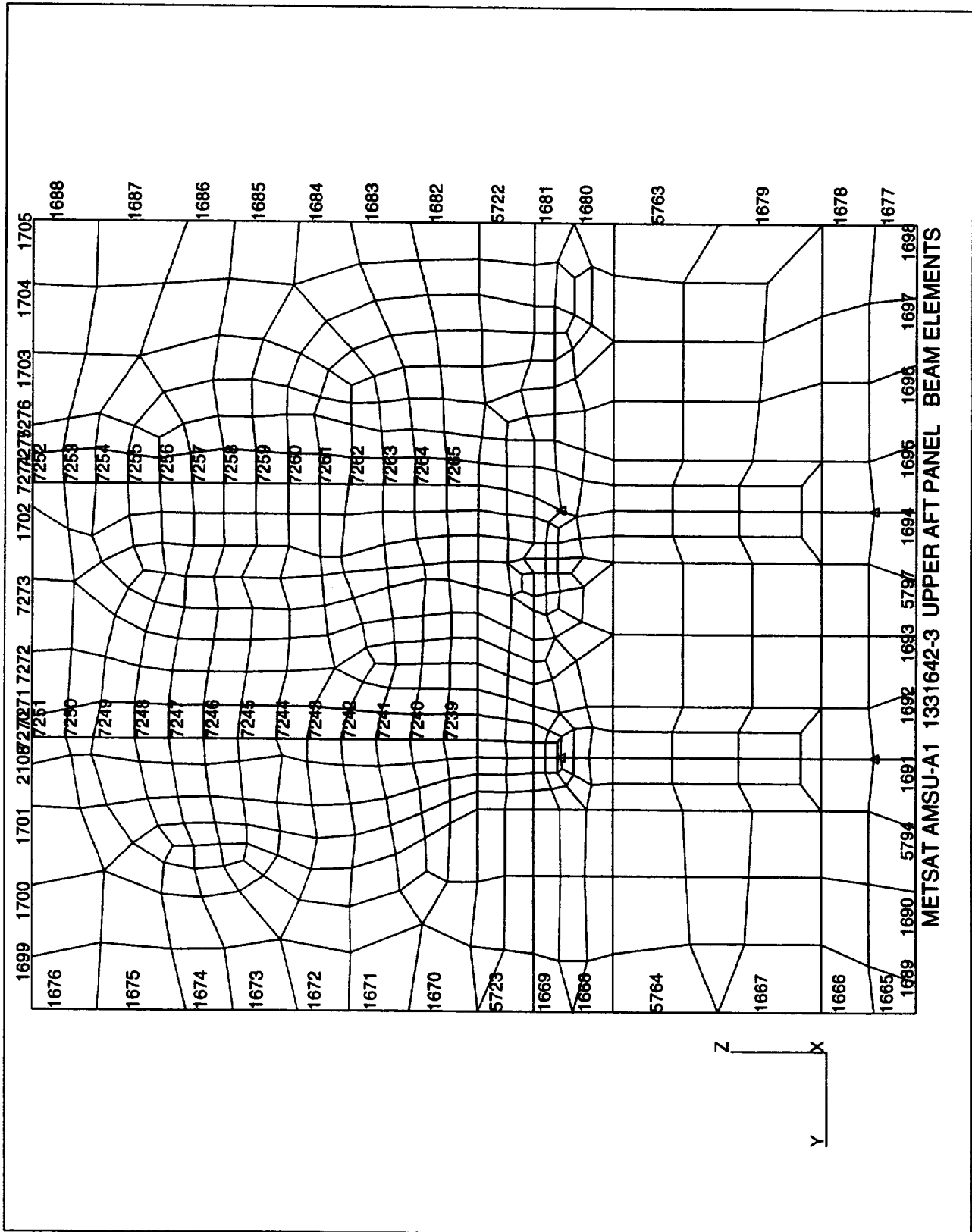


Figure A-38 METSAT AMSU-A1 1331642-3 Upper Aft Panel Beam Elements

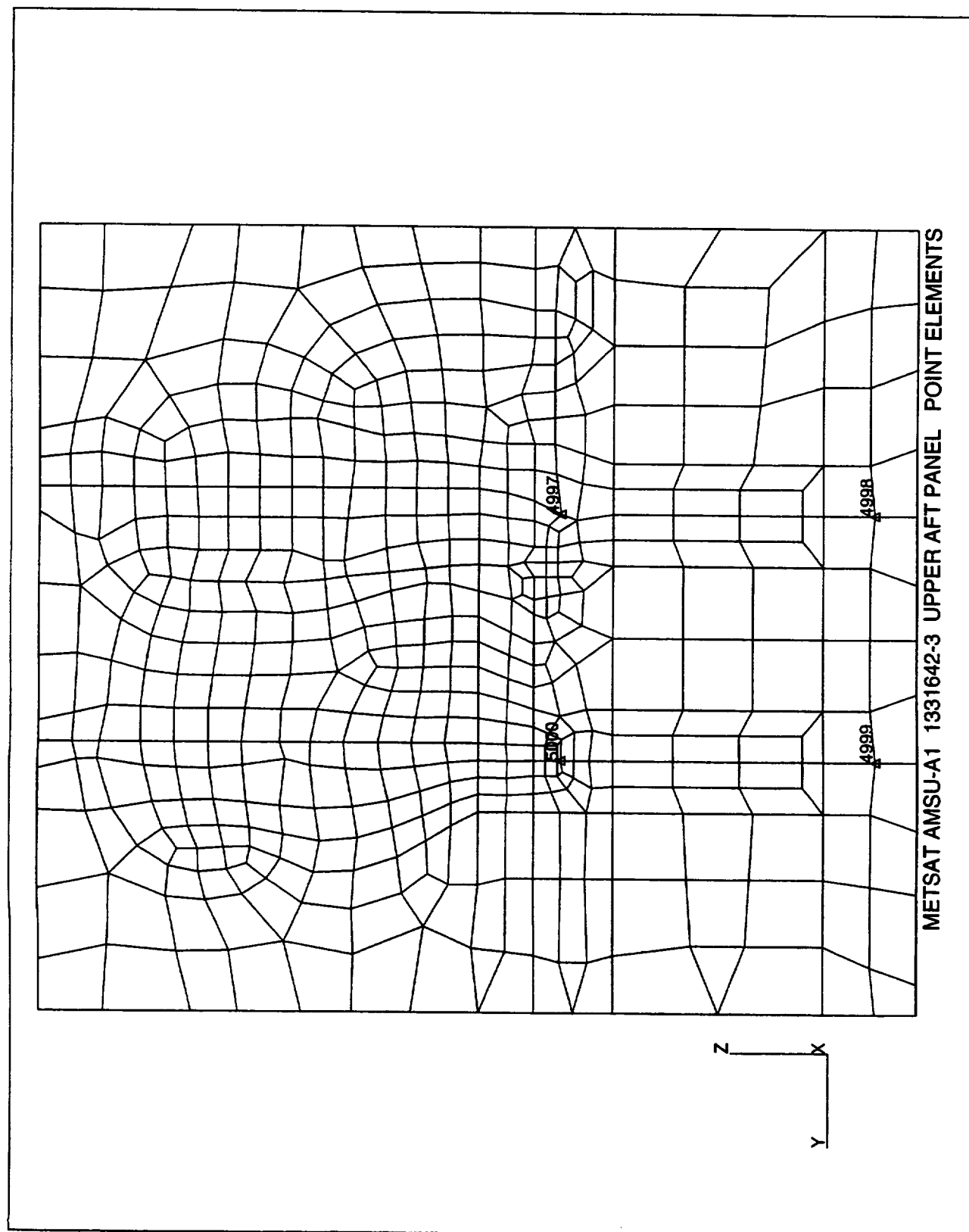


Figure A-39 METSAT AMSU-A1 1331642-3 Upper Aft Panel Point Elements

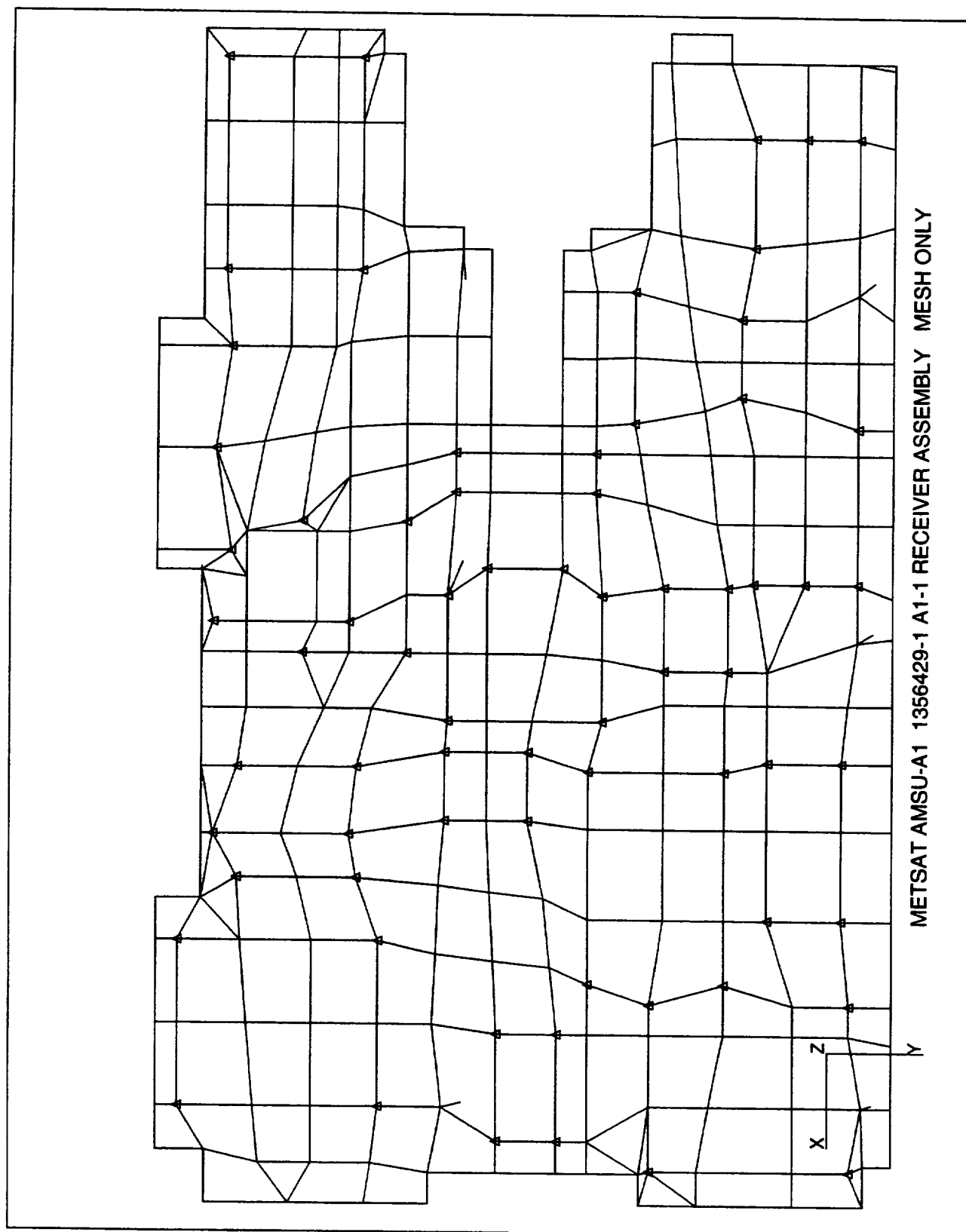


Figure A-40 METSAT AMSU-A1 1331429-1 A1-1 Receiver Assembly Mesh Only

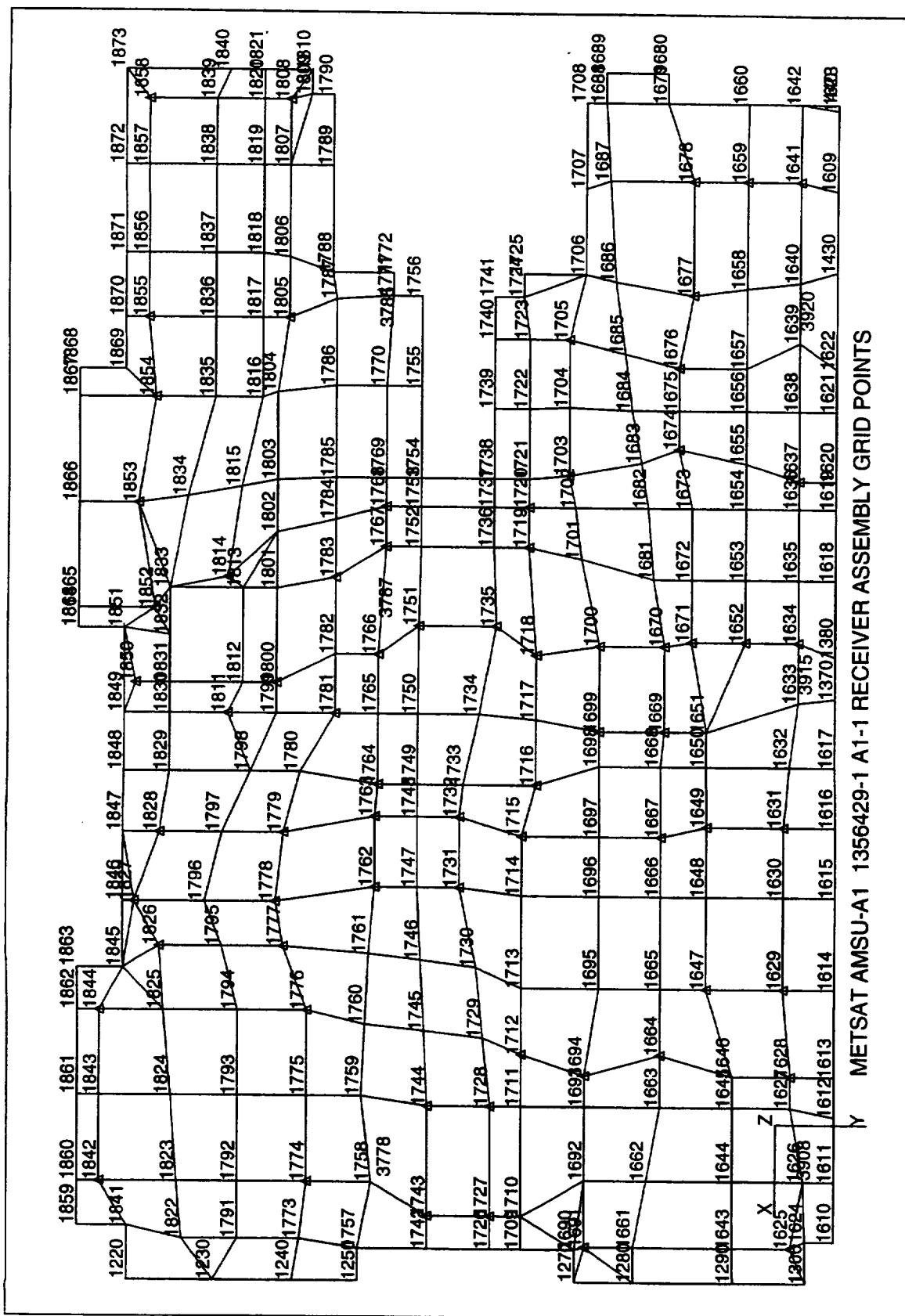


Figure A-41 METSAT AMSU-A1 1331429-1 A1-1 Receiver Assembly Grid Points

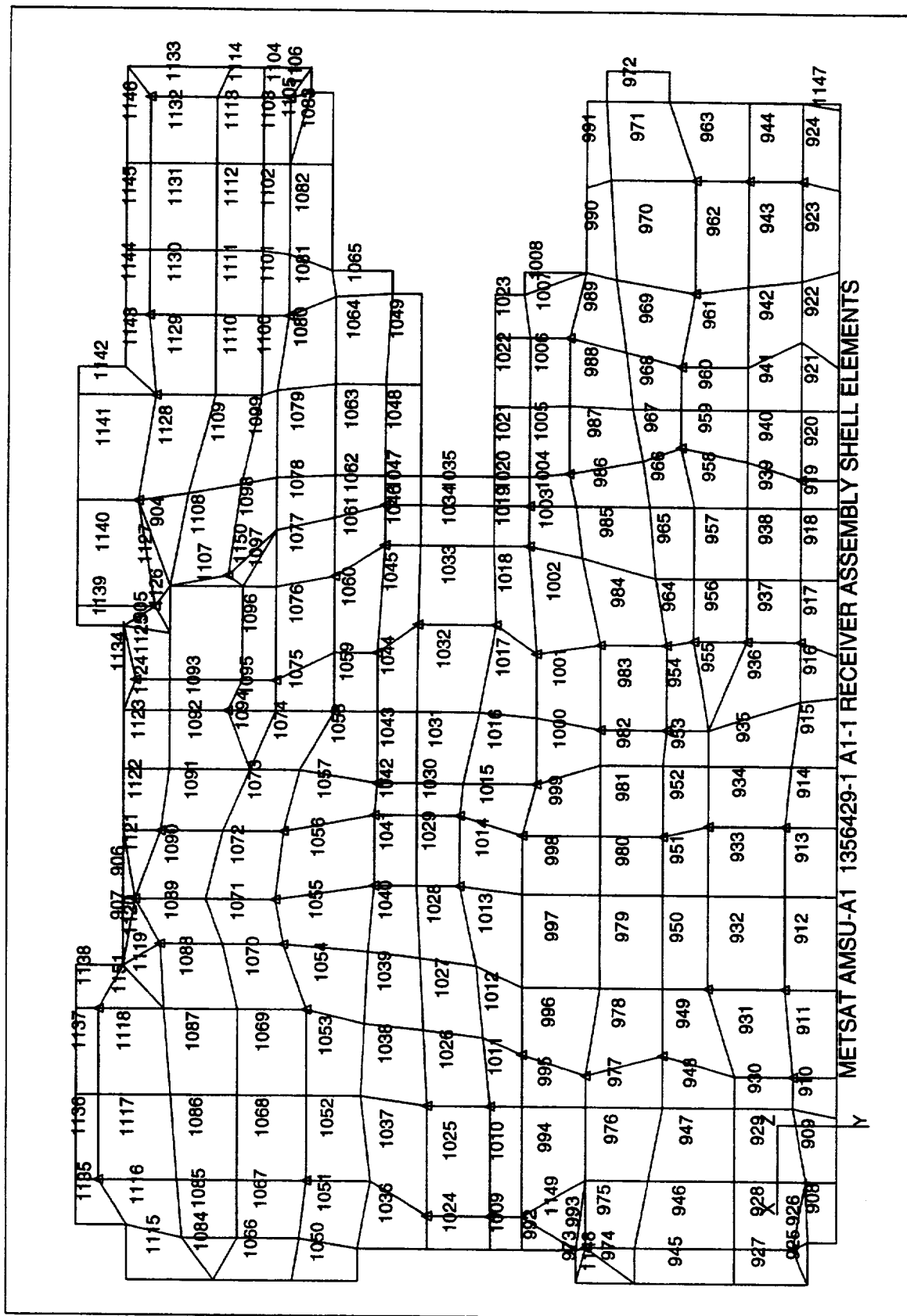


Figure A-42 METSAT AMSU-A1 1331429-1 A1-1 Receiver Assembly Shell Elements

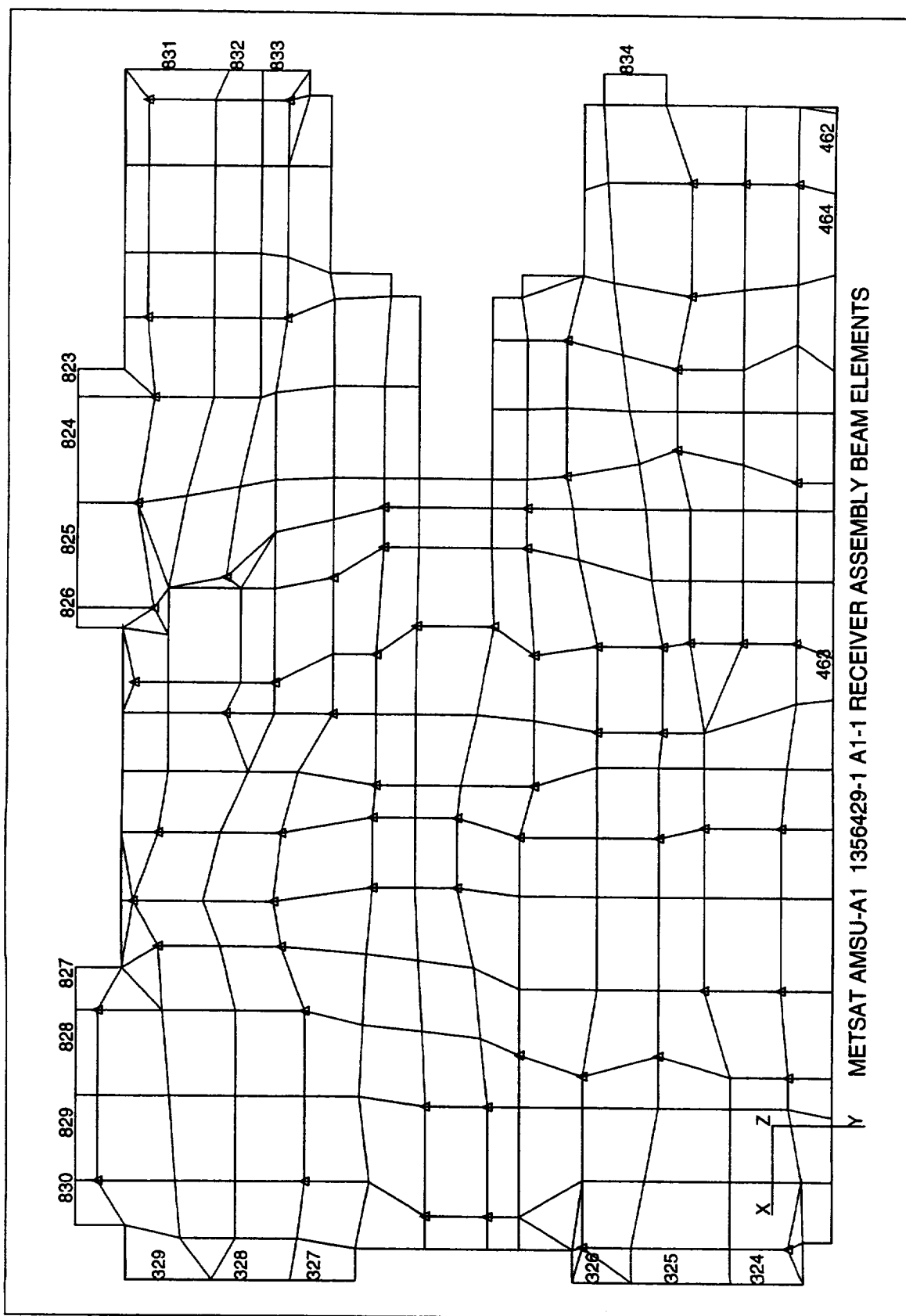


Figure A-43 METSAT AMSU-A1 1331429-1 A1-1 Receiver Assembly Beam Elements

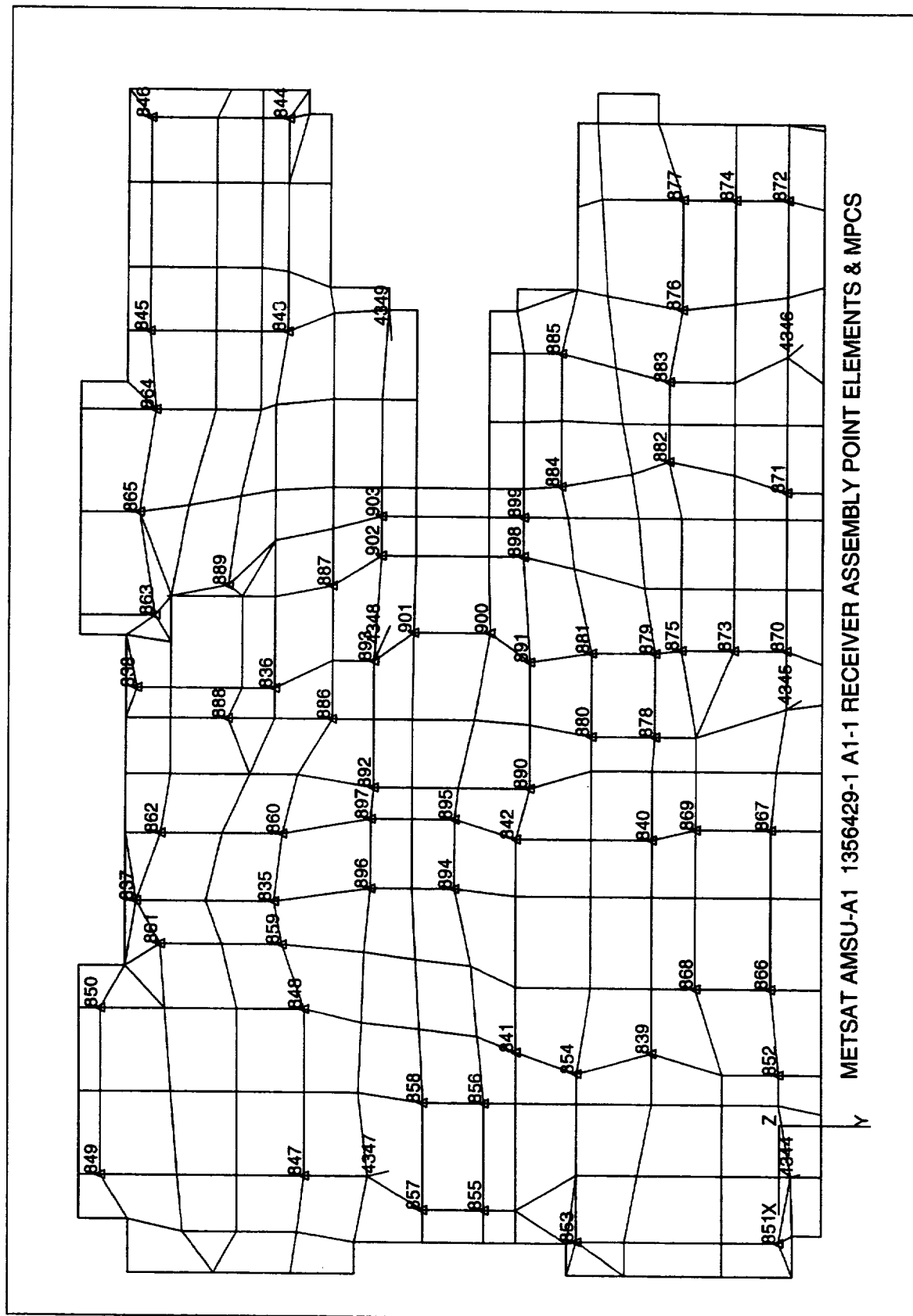


Figure A-44 METSAT AMSU-A1 1331429-1 A1-1 Receiver Assembly Point Elements & MPCS

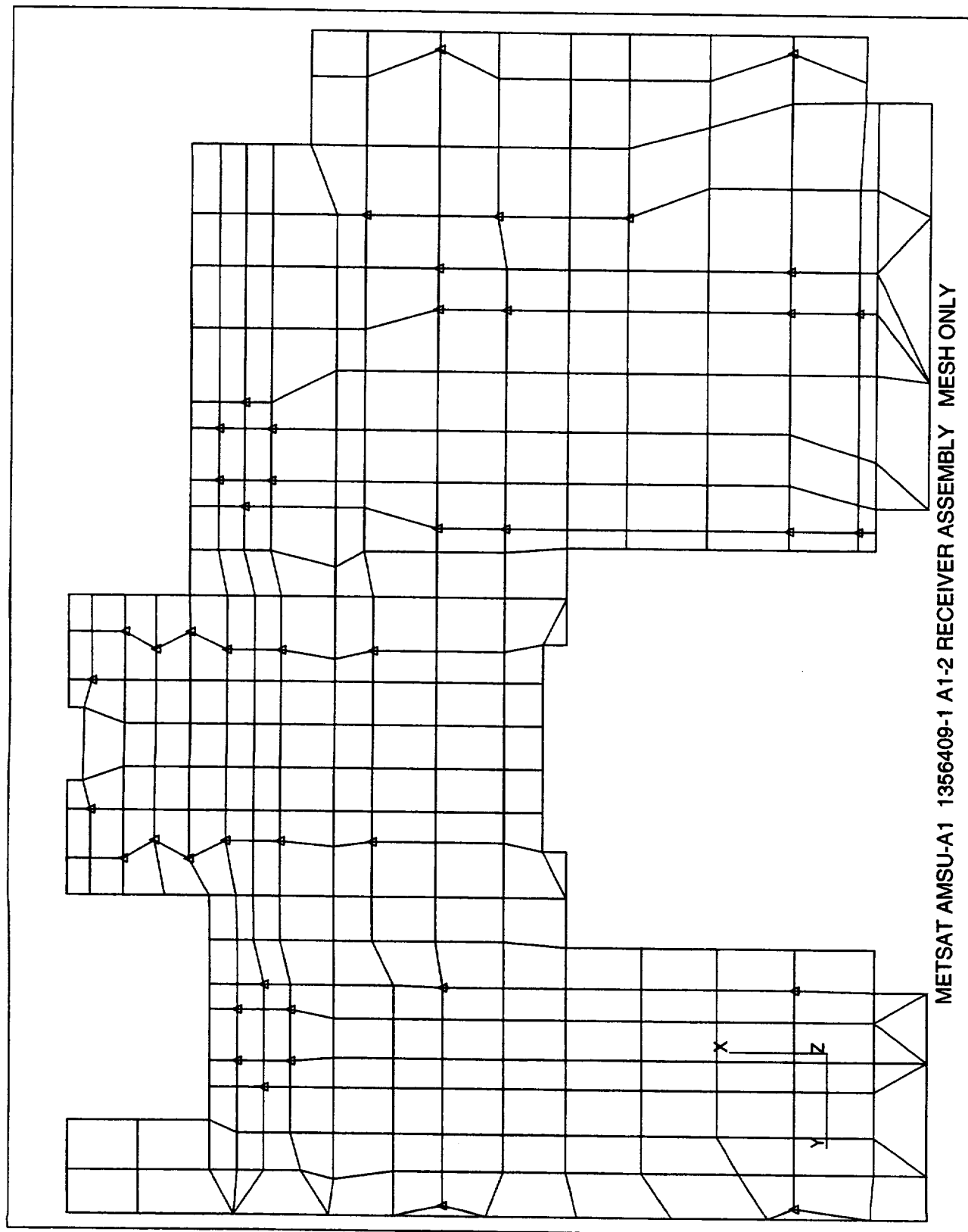


Figure A-45 METSAT AMSU-A1 1356409-1 A1-2 Receiver Assembly Mesh Only

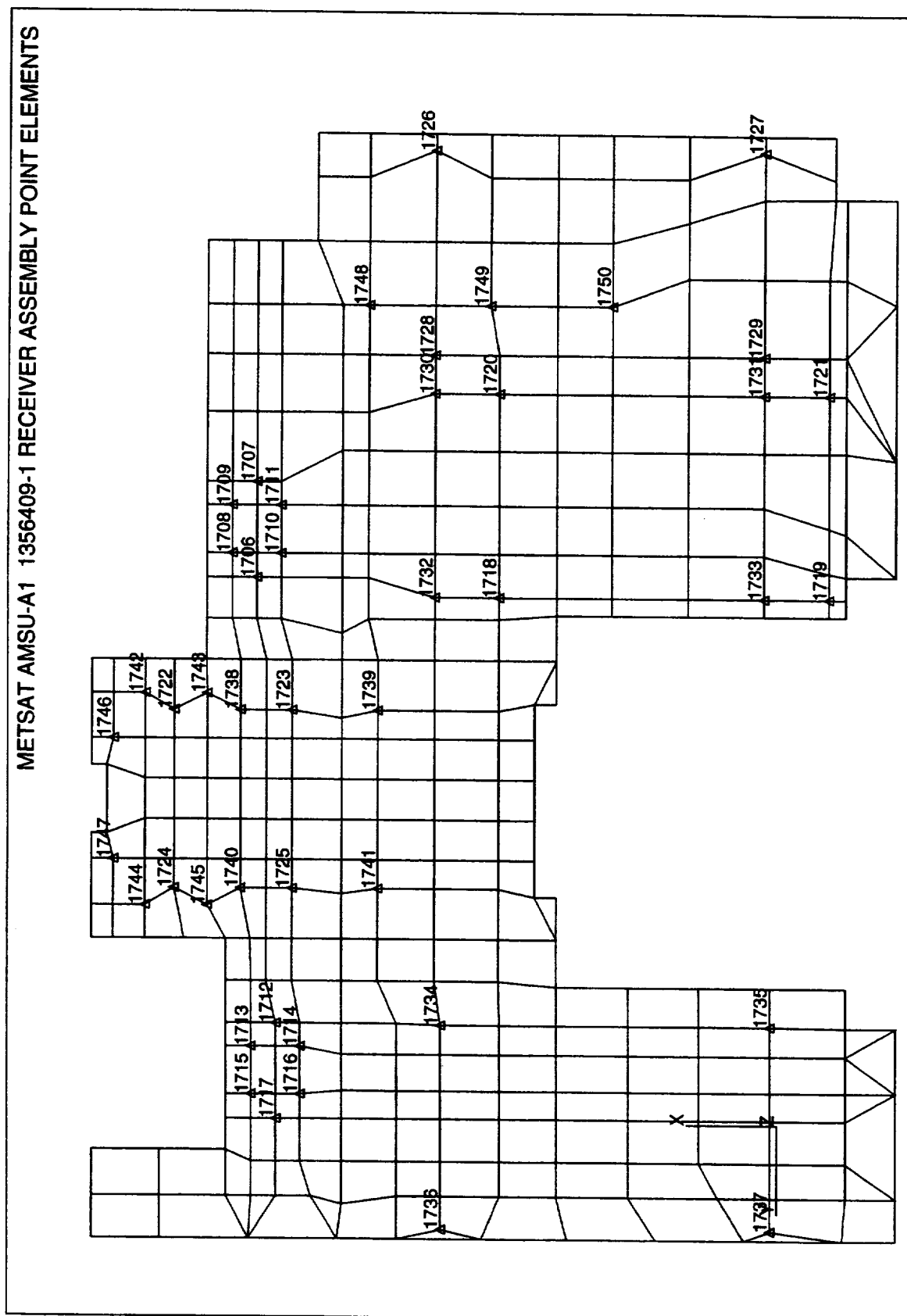
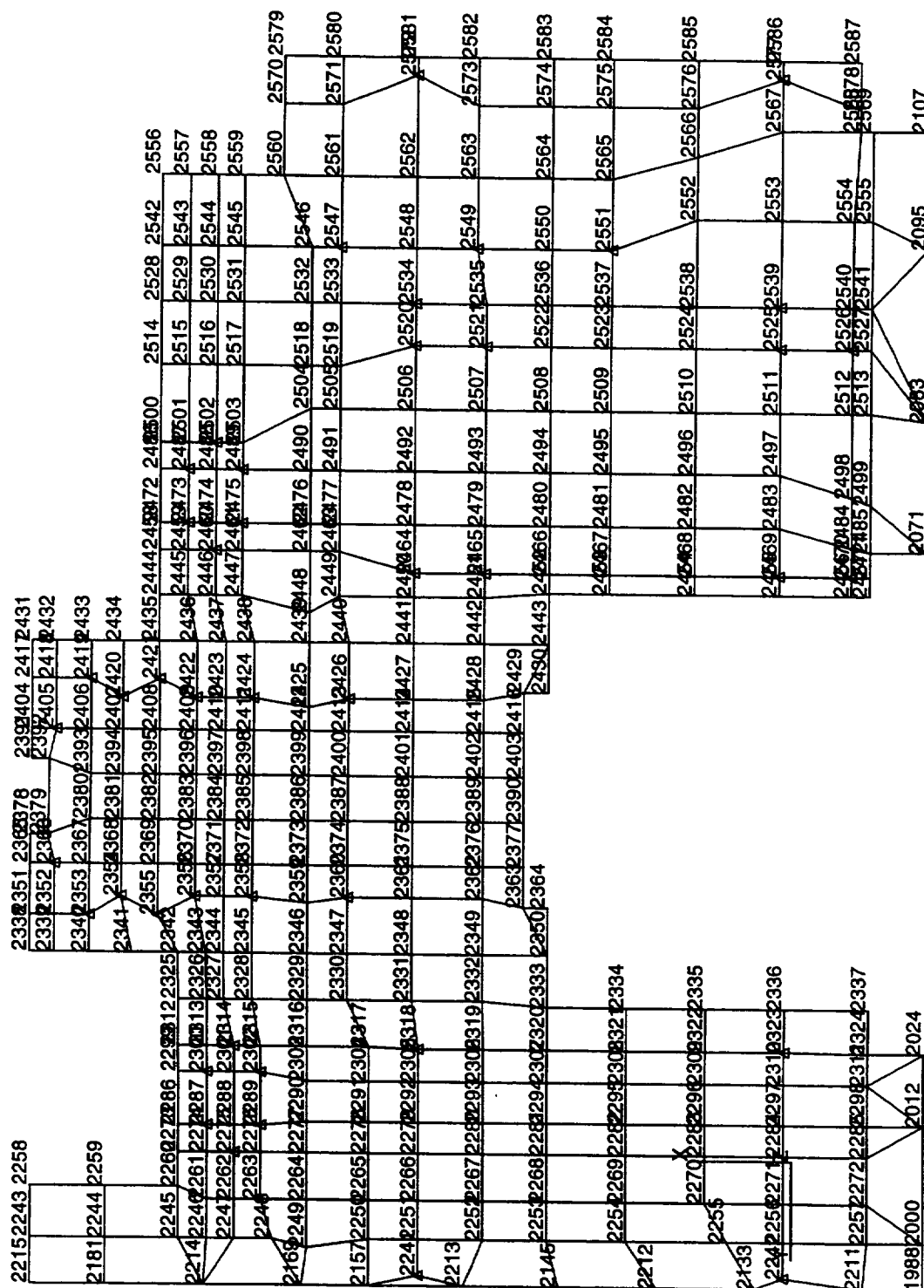


Figure A-46 METSAT AMSU-A1 1356409-1 Receiver Assembly Point Elements



A-51



Figure A-48 METSAT AMSU-A1 1356409-1 Receiver Assembly Shell Elements

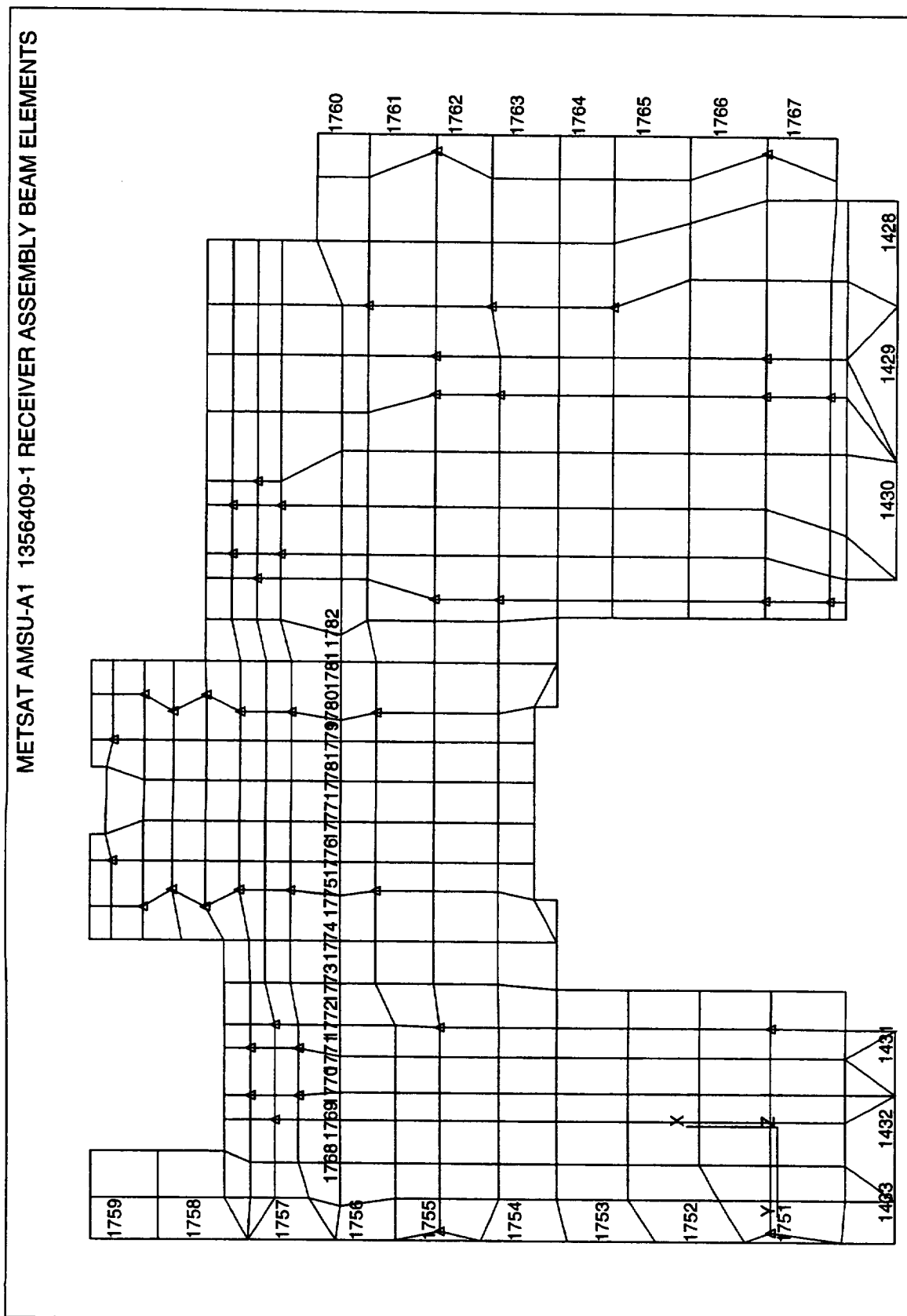


Figure A-49 METSAT AMSU-A1 1356409-1 Receiver Assembly Beam Elements

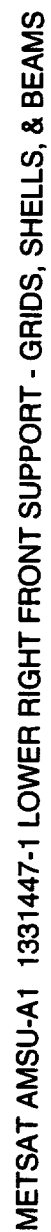


Figure A-50 METSAT AMSU-A1 1331447-1 Lower Right Front Support - Grids, Shells, & Beams

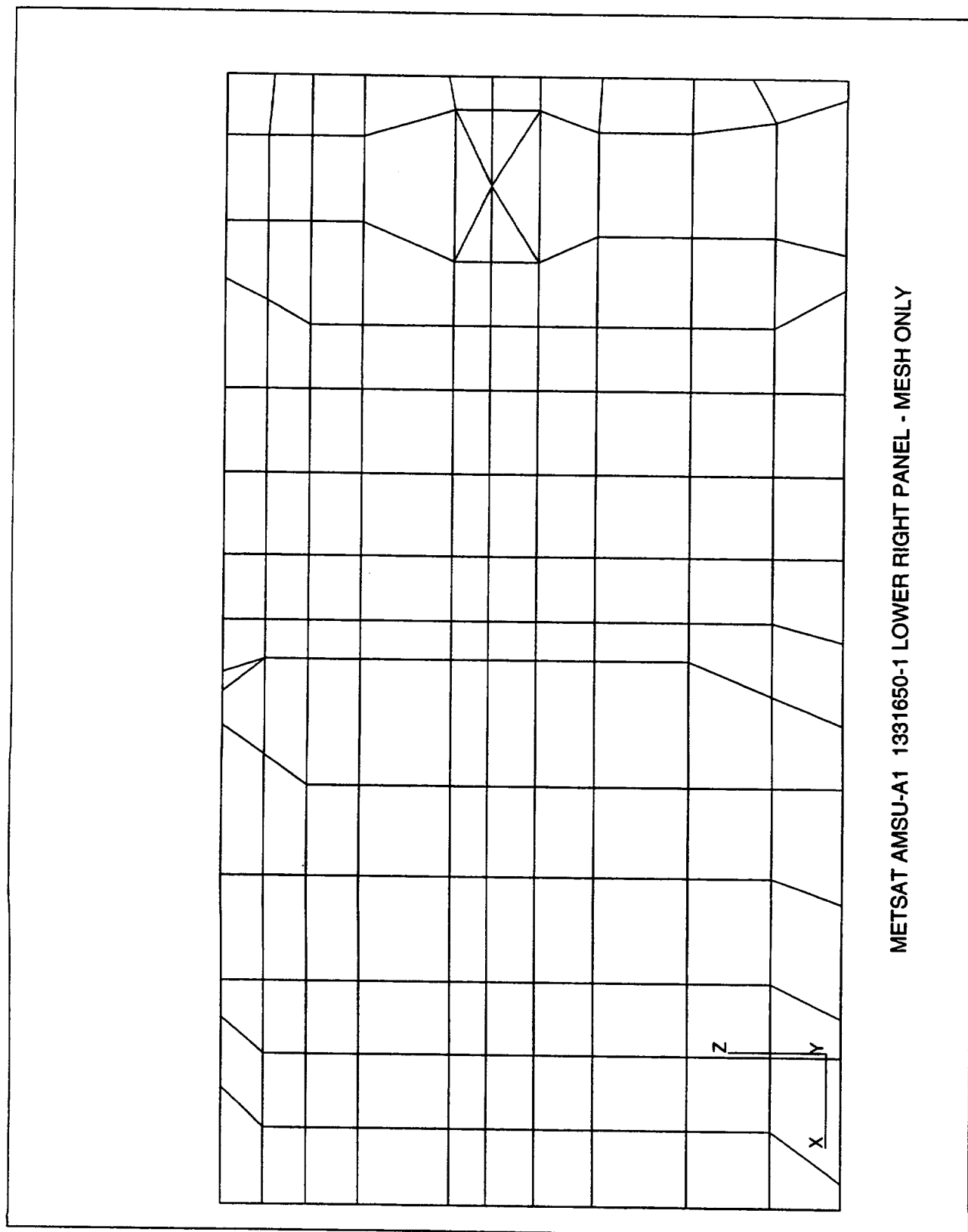


Figure A-51 METSAT AMSU-A1 1331650-1 Lower Right Panel - Mesh Only

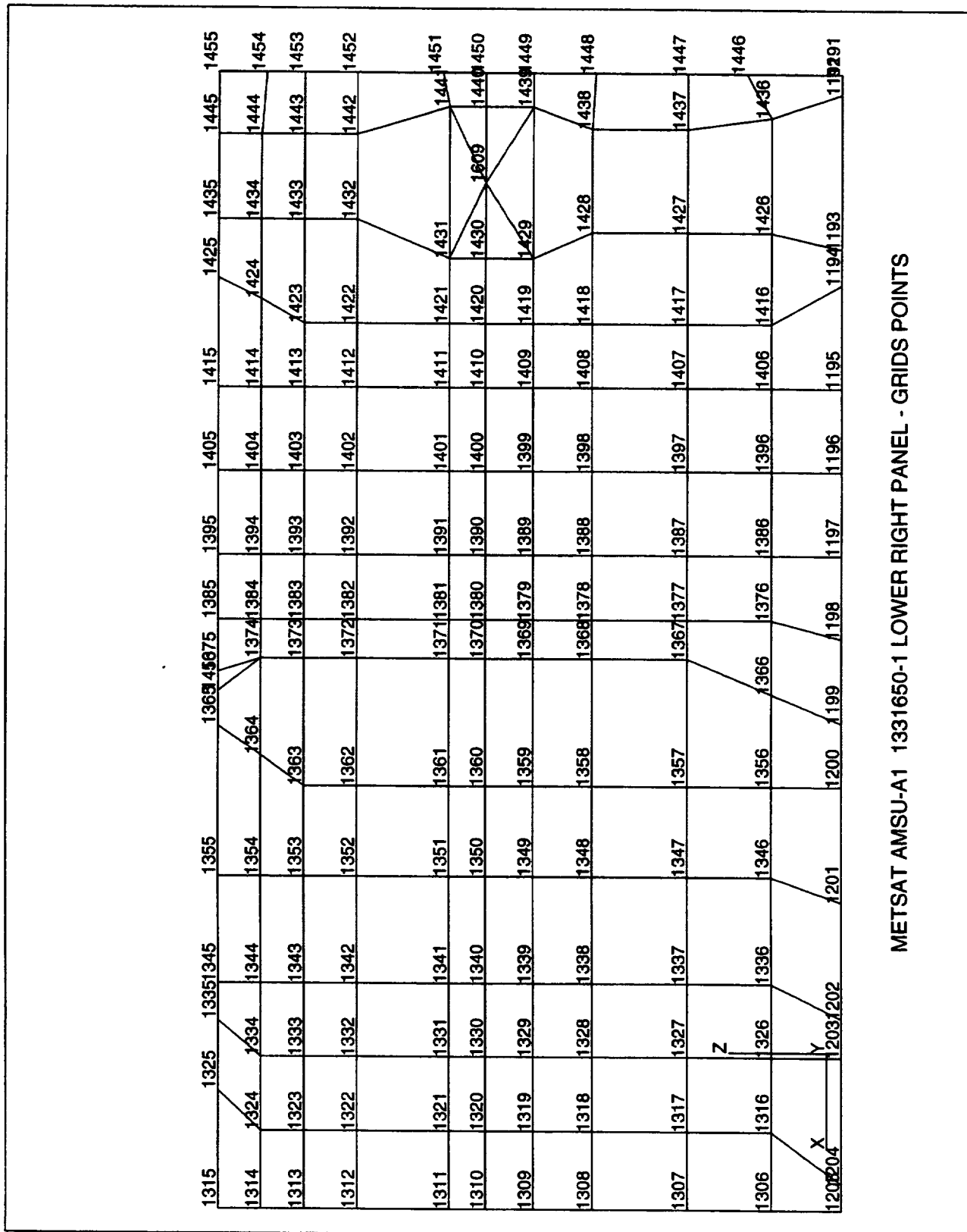


Figure A-52 METSAT AMSU-A1 1331650-1 Lower Right Panel - Grids Points

474	484	494	504	514	524	534	544	554	564	574	584	594	604
473	483	493	503	513	523	533	543	553	563	573	583	593	603
472	482	492	502	512	522	532	542	552	562	572	582	592	602
471	481	491	501	511	521	531	541	551	561	571	581	591	601
470	480	490	500	510	520	530	540	550	560	570	580	590	600
469	479	489	499	509	519	529	539	549	559	569	579	589	599
468	478	488	498	508	518	528	538	548	558	568	578	588	598
467	477	487	497	507	517	527	537	547	557	567	577	587	597
466	476	486	496	506	516	526	536	546	556	566	576	586	596
465	475	485	495	505	515	525	535	545	555	565	575	585	595

METSAT AMSU-A1 1331650-1 LOWER RIGHT PANEL - SHELL ELEMENTS

Figure A-53 METSAT AMSU-A1 1331650-1 Lower Right Panel - Shell Elements

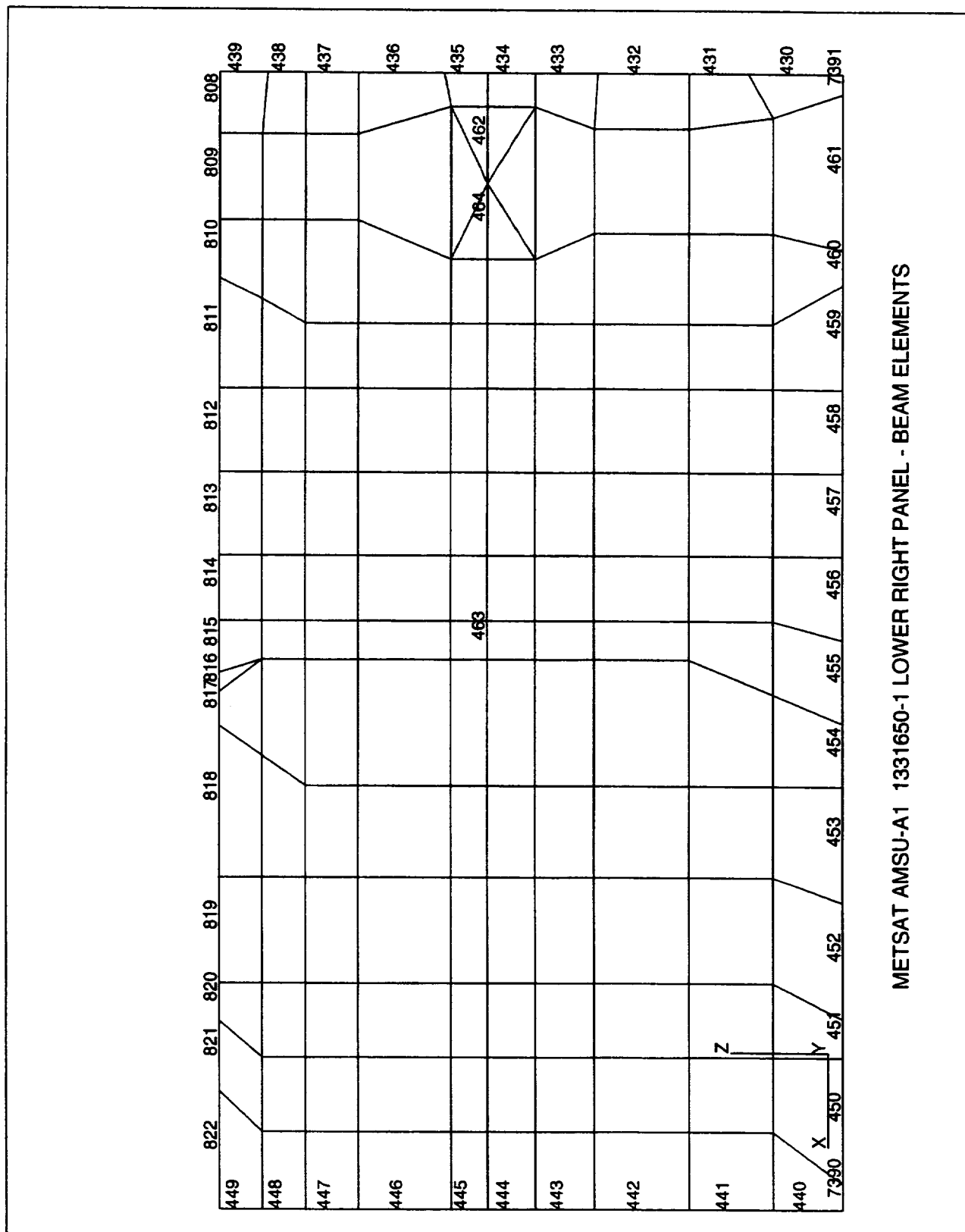


Figure A-54 METSAT AMSU-A1 1331650-1 Lower Right Panel - Beam Elements

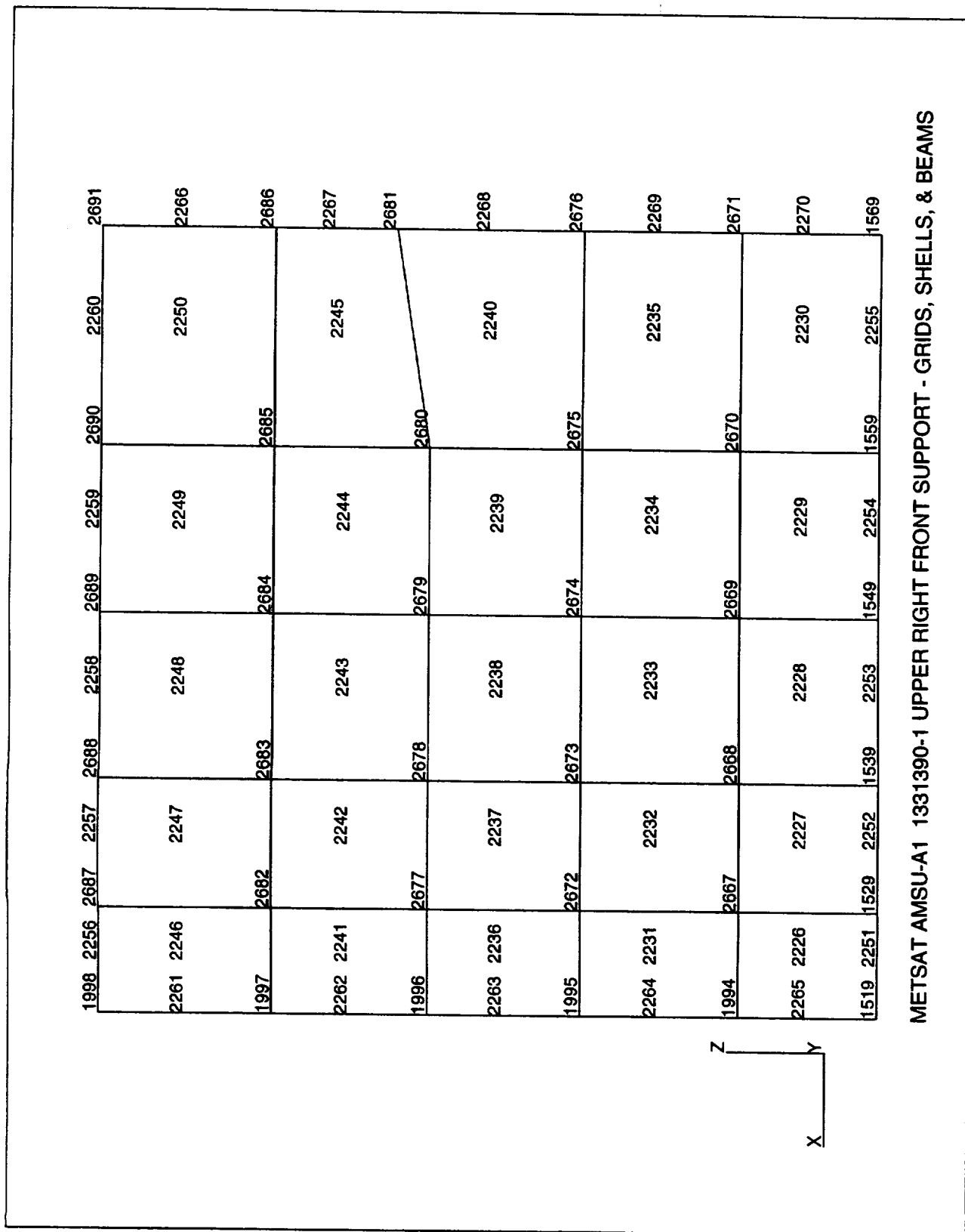


Figure A-55 METSAT AMSU-A1 1331390-1 Upper Right Front Support - Grids, Shells & Beams

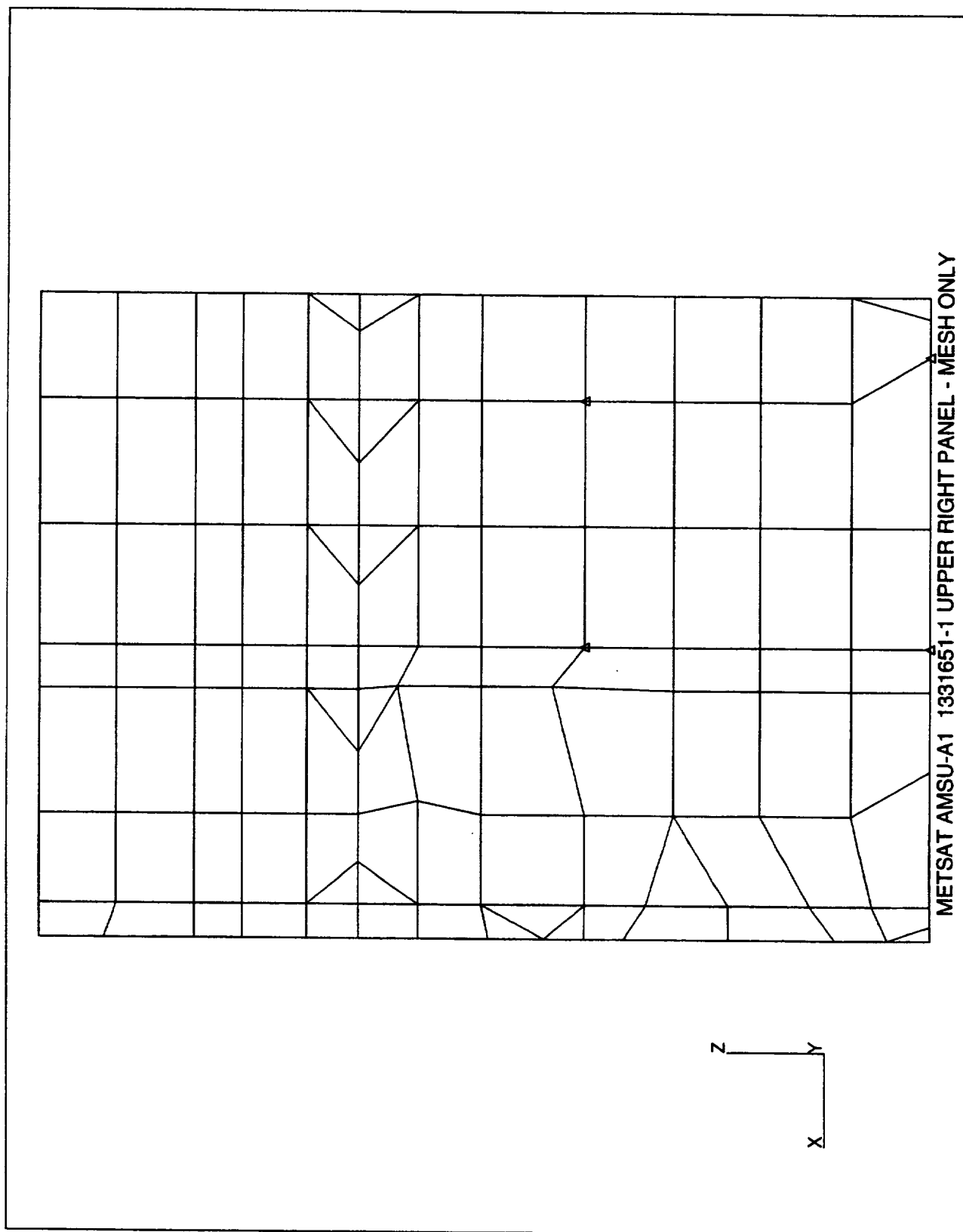
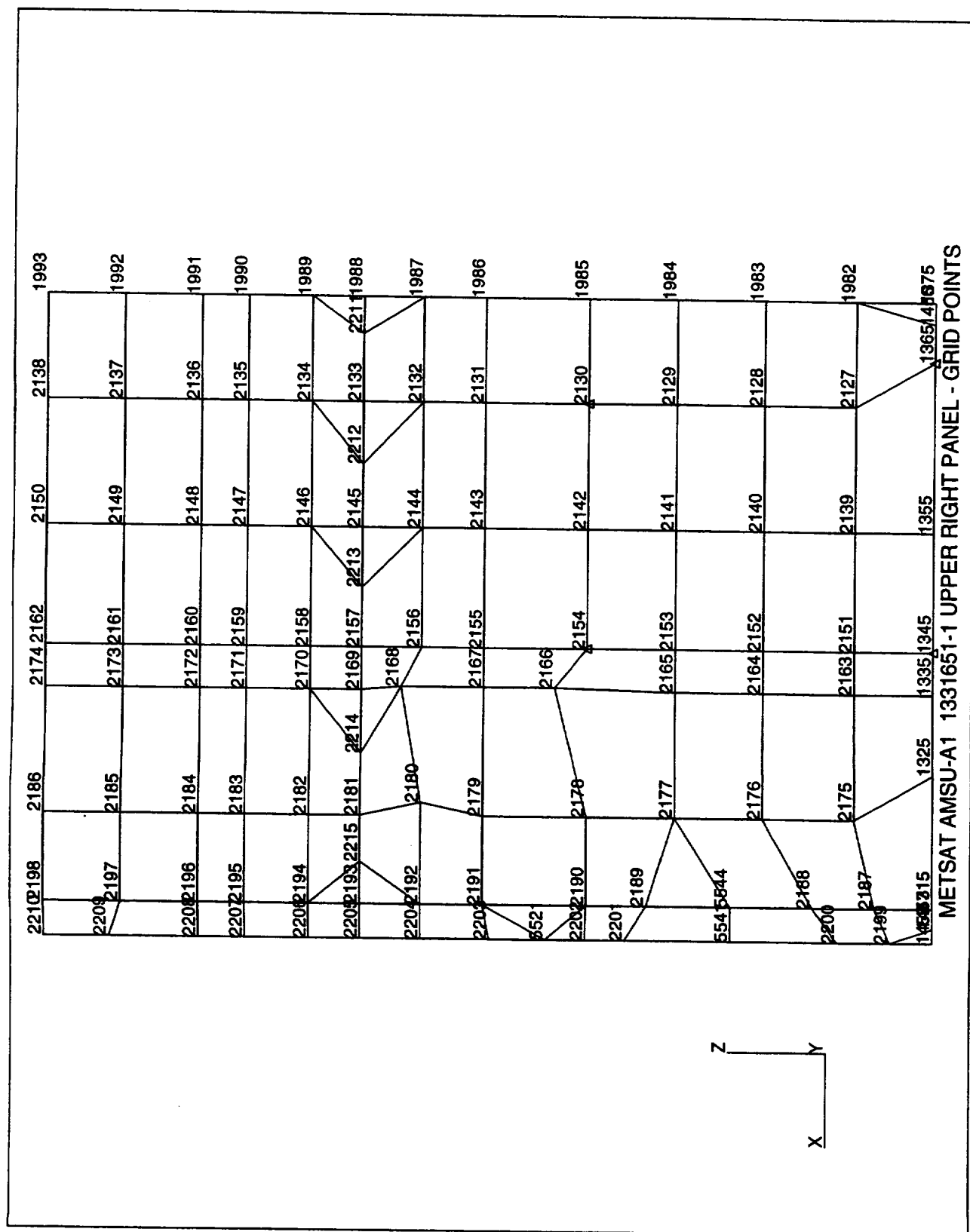


Figure A-56 METSAT AMSU-A1 1331651-1 Upper Right Panel - Mesh Only



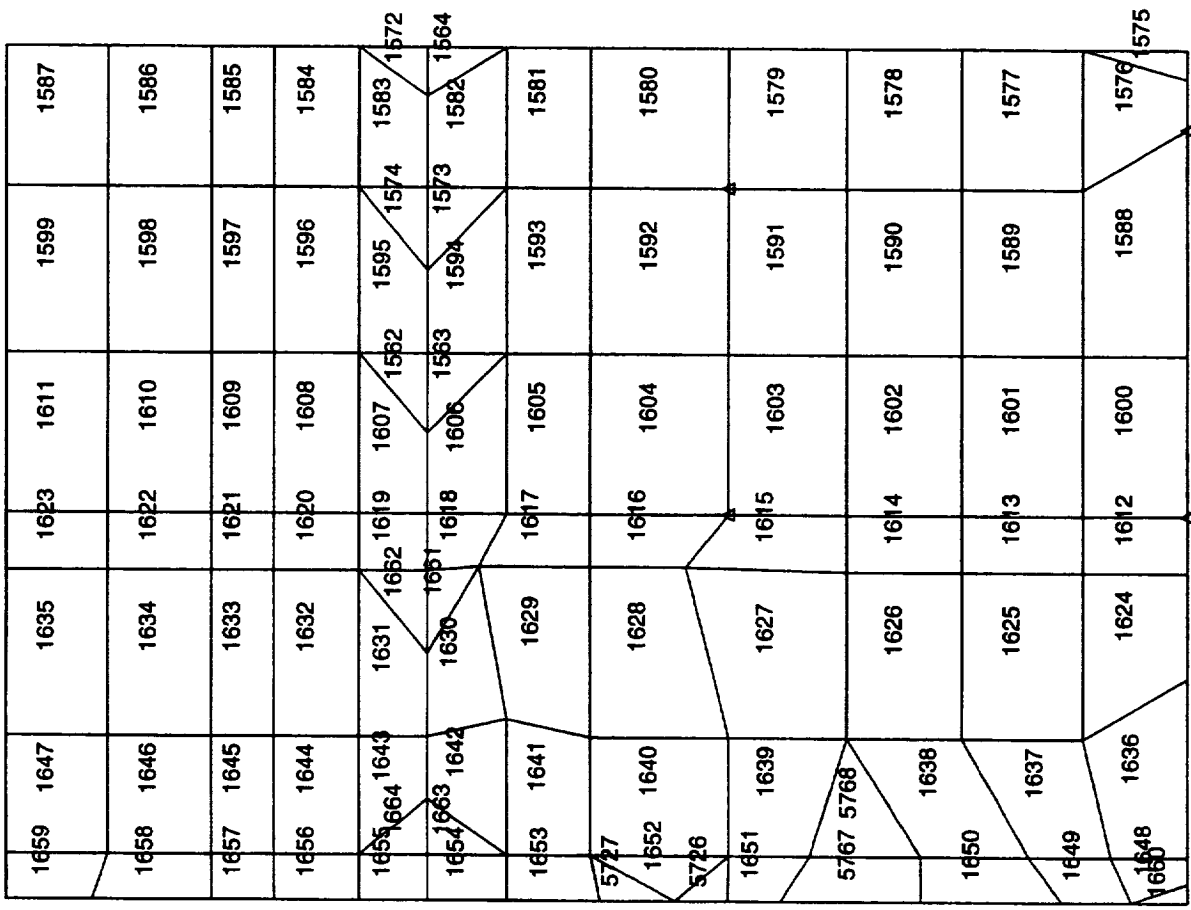


Figure A-58 METSAT AMSU-A1 1331651-1 Upper Right Panel - Shell Elements

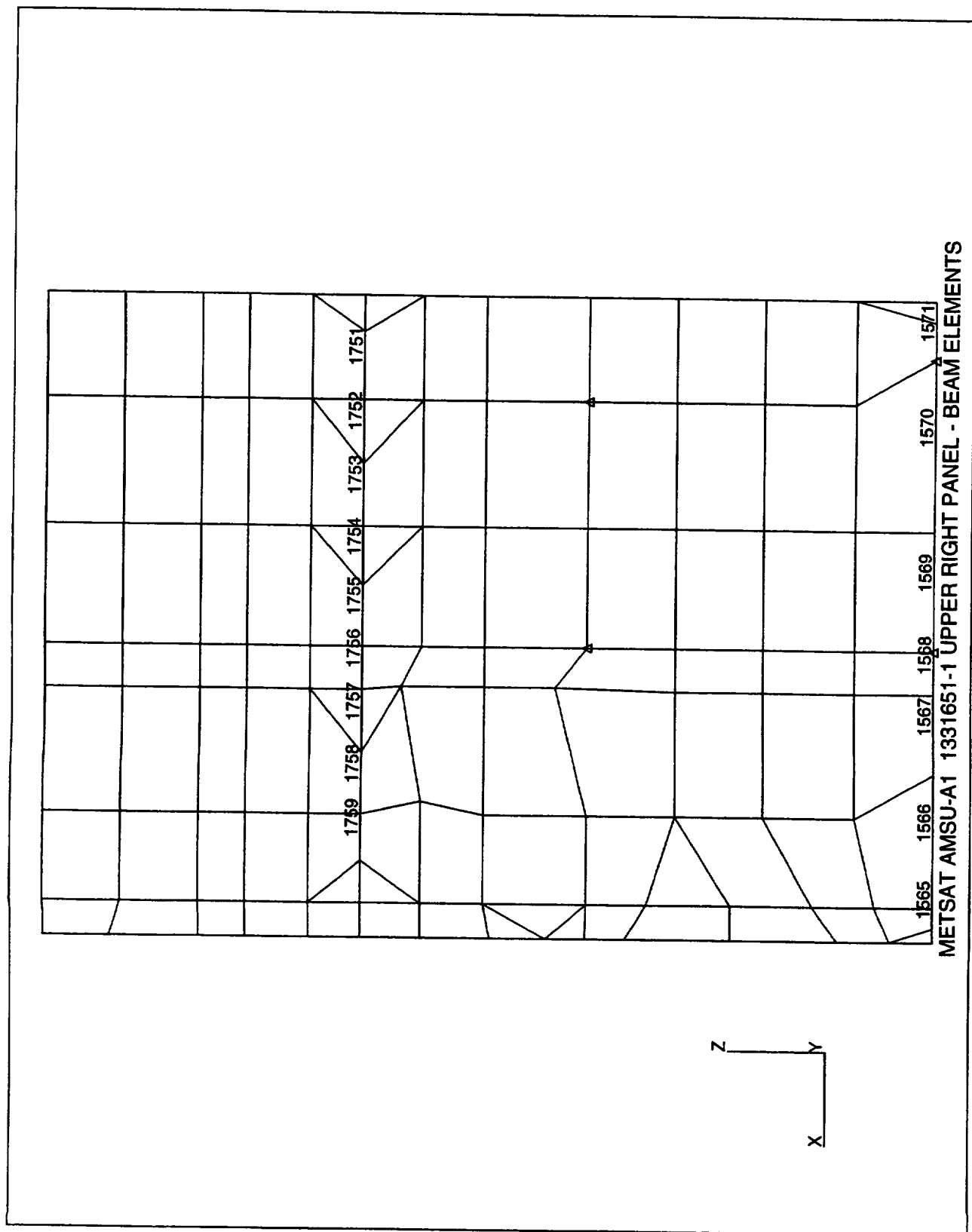


Figure A-59 METSAT AMSU-A1 1331651-1 Upper Right Panel - Beam Elements

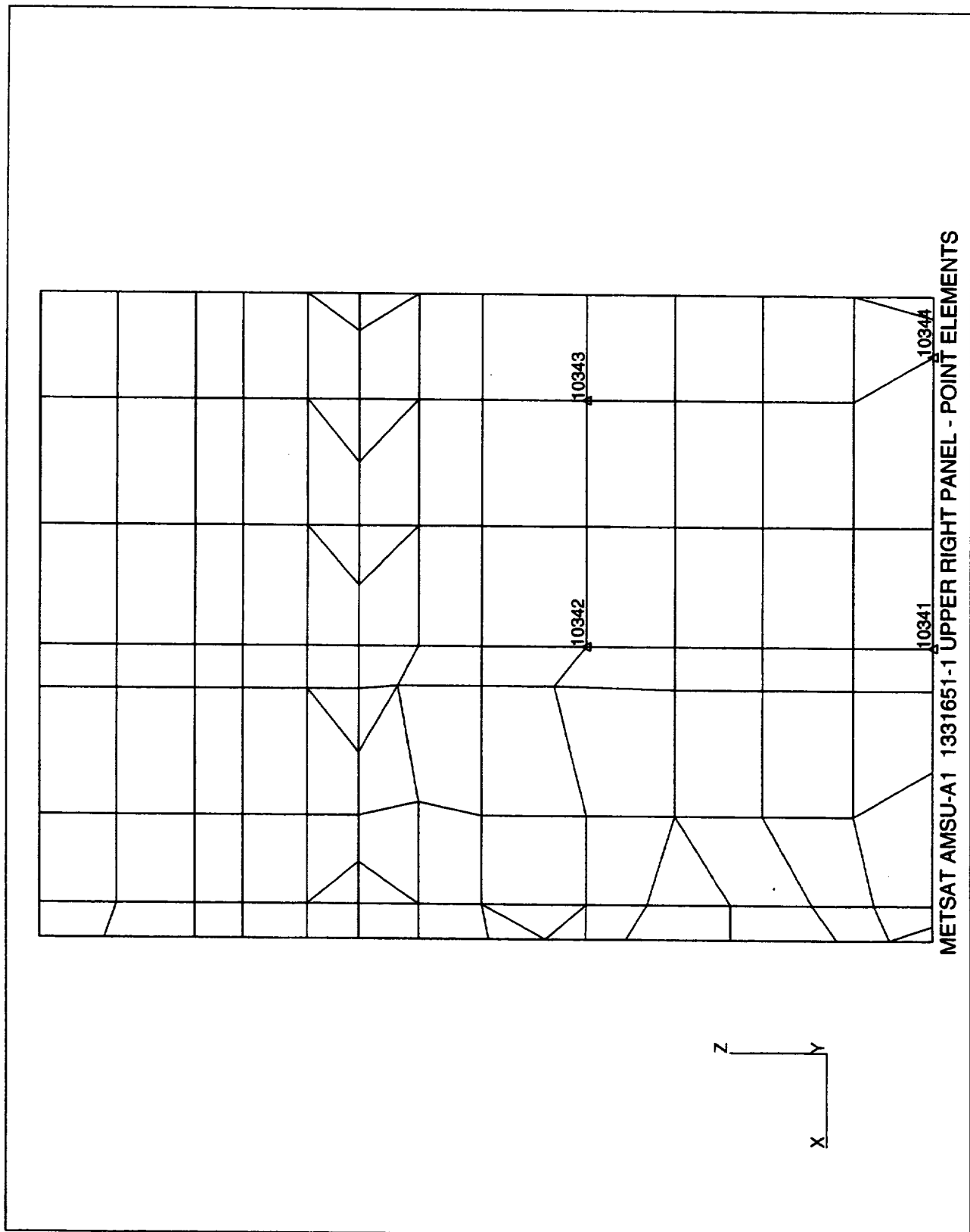


Figure A-60 METSAT AMSU-A1 1331651-1 Upper Right Panel - Point Elements

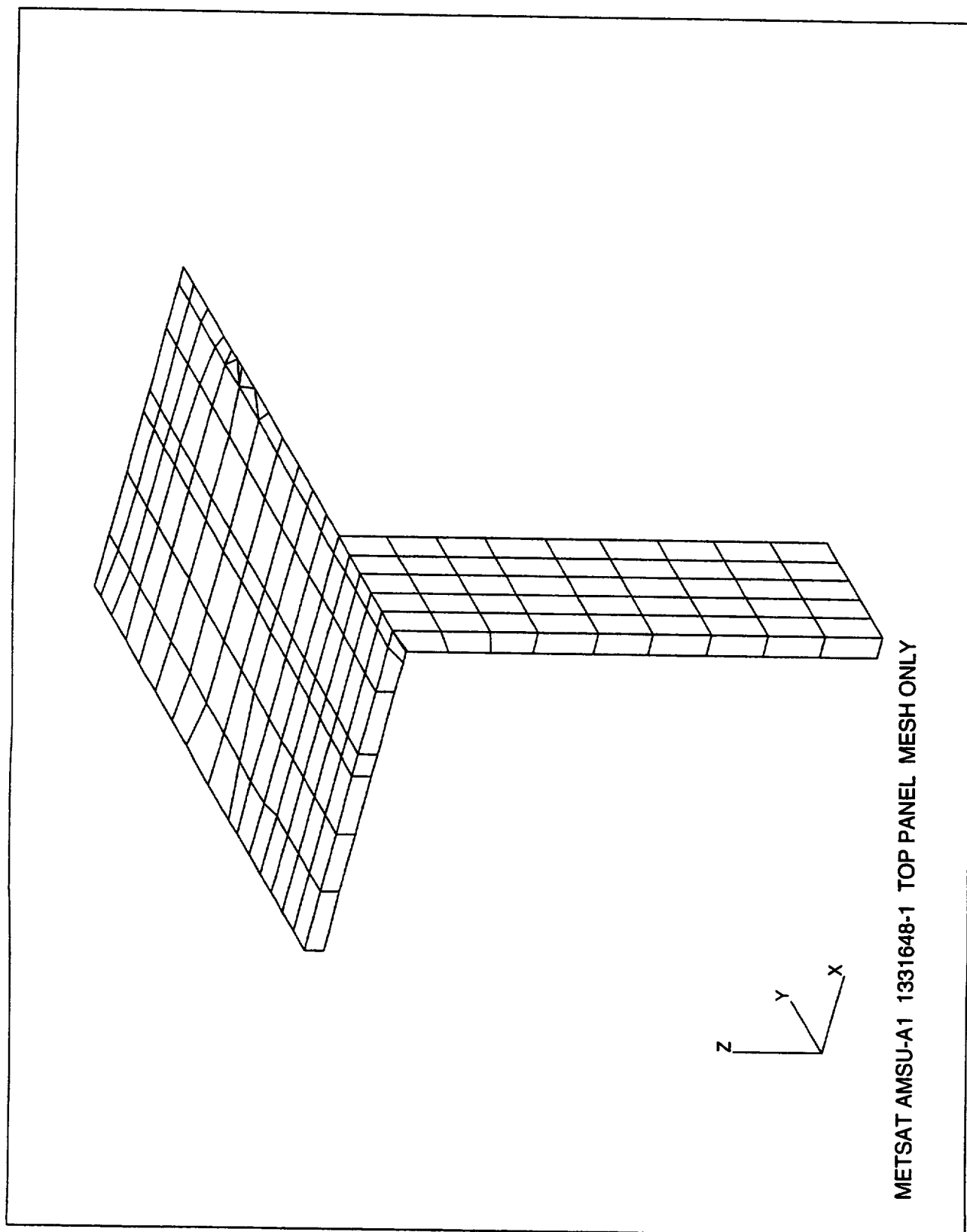
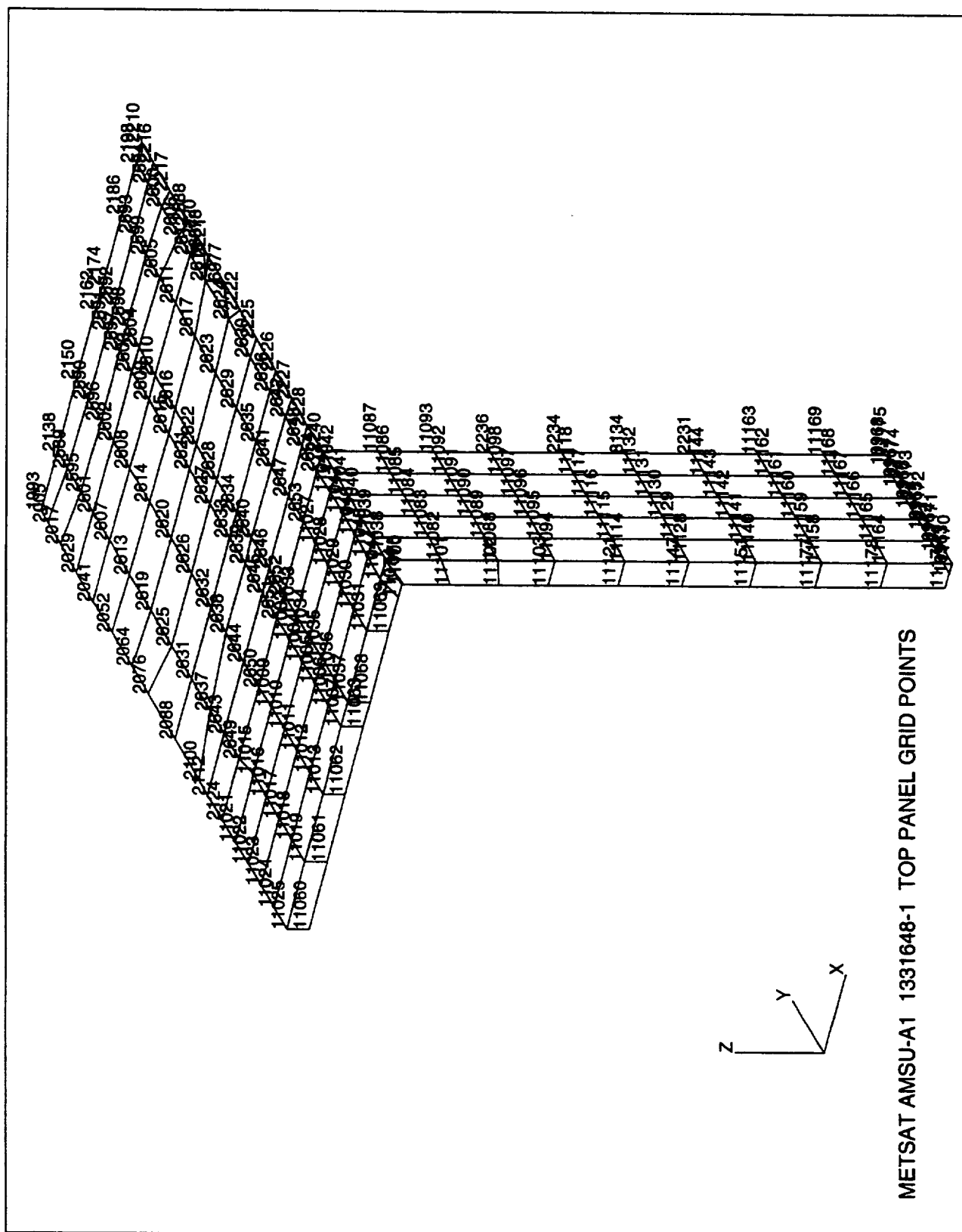


Figure A-61 METSAT AMSU-A1 1331648-1 Top Panel Mesh Only



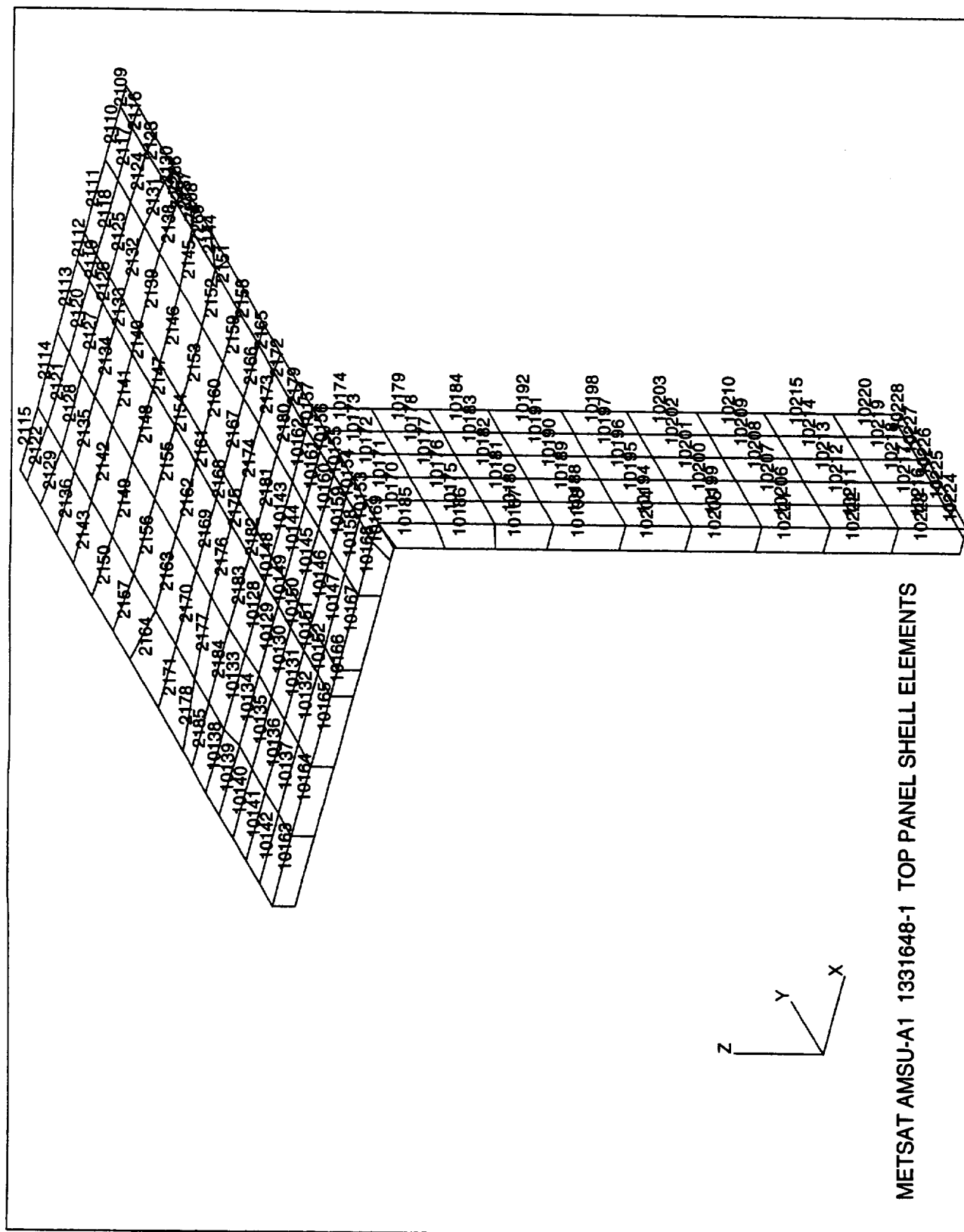


Figure A-63 METSAT AMSU-A1 1331648-1 Top Panel Shell Elements

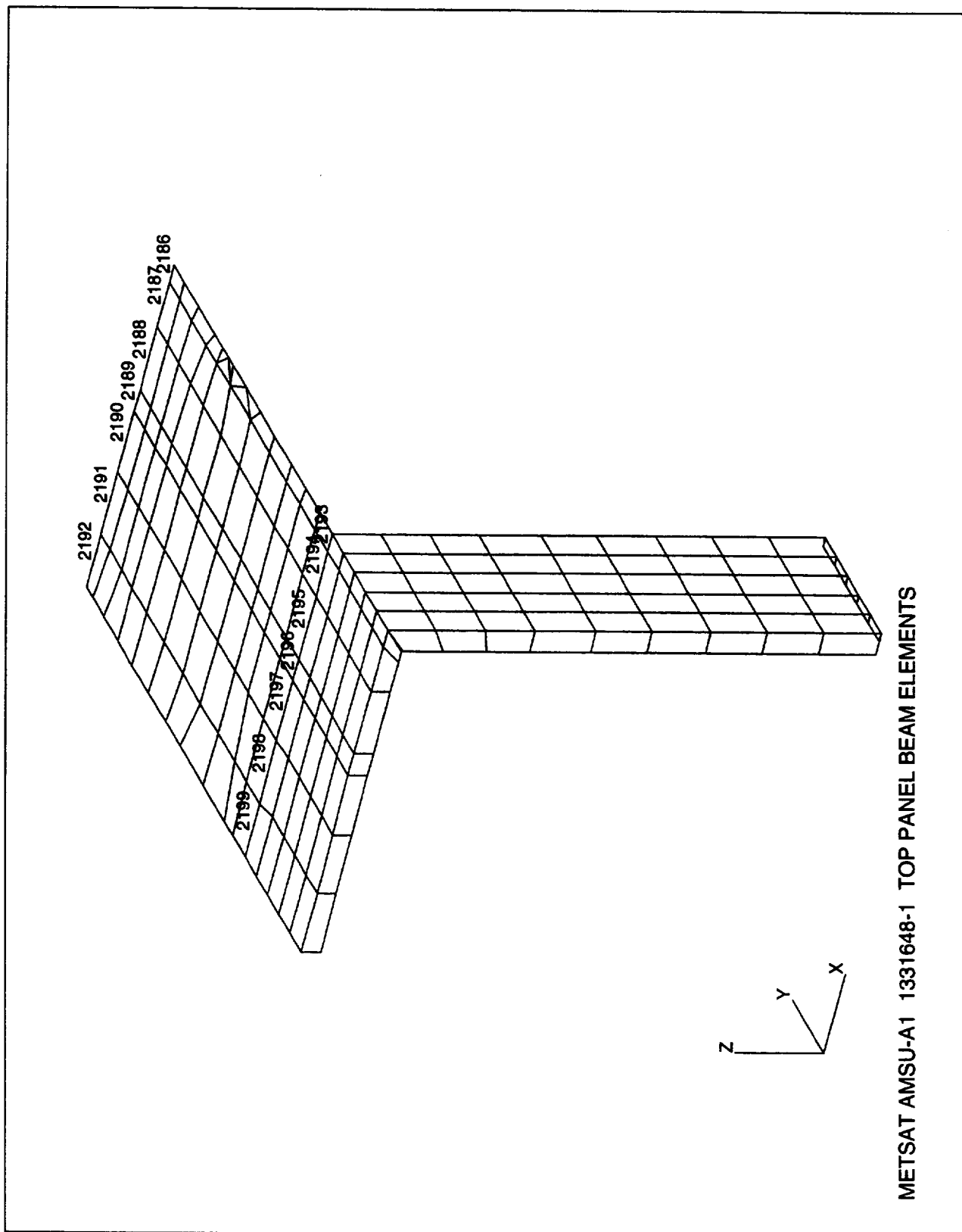


Figure A-64 METSAT AMSU-A1 1331648-1 Top Panel Beam Elements

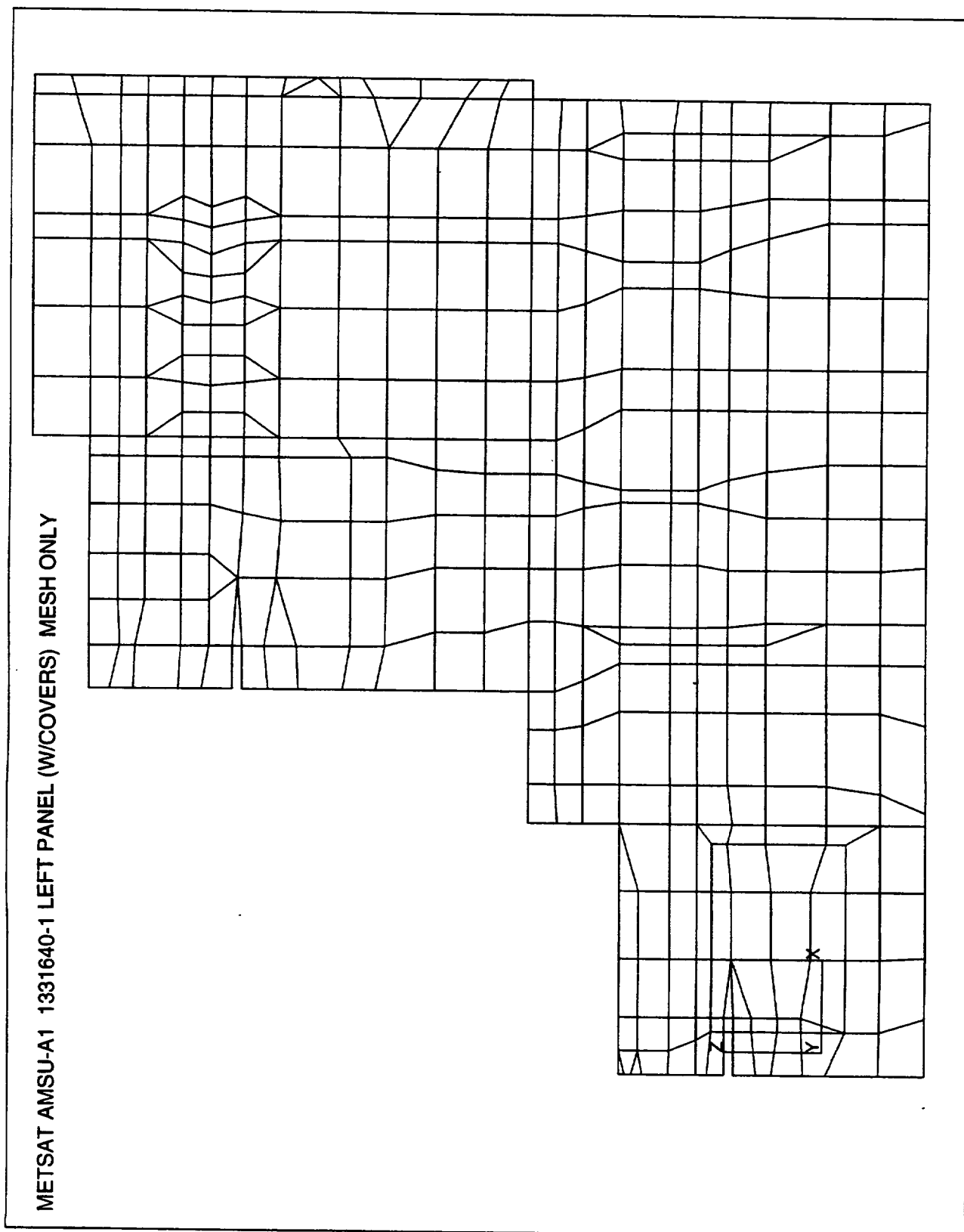
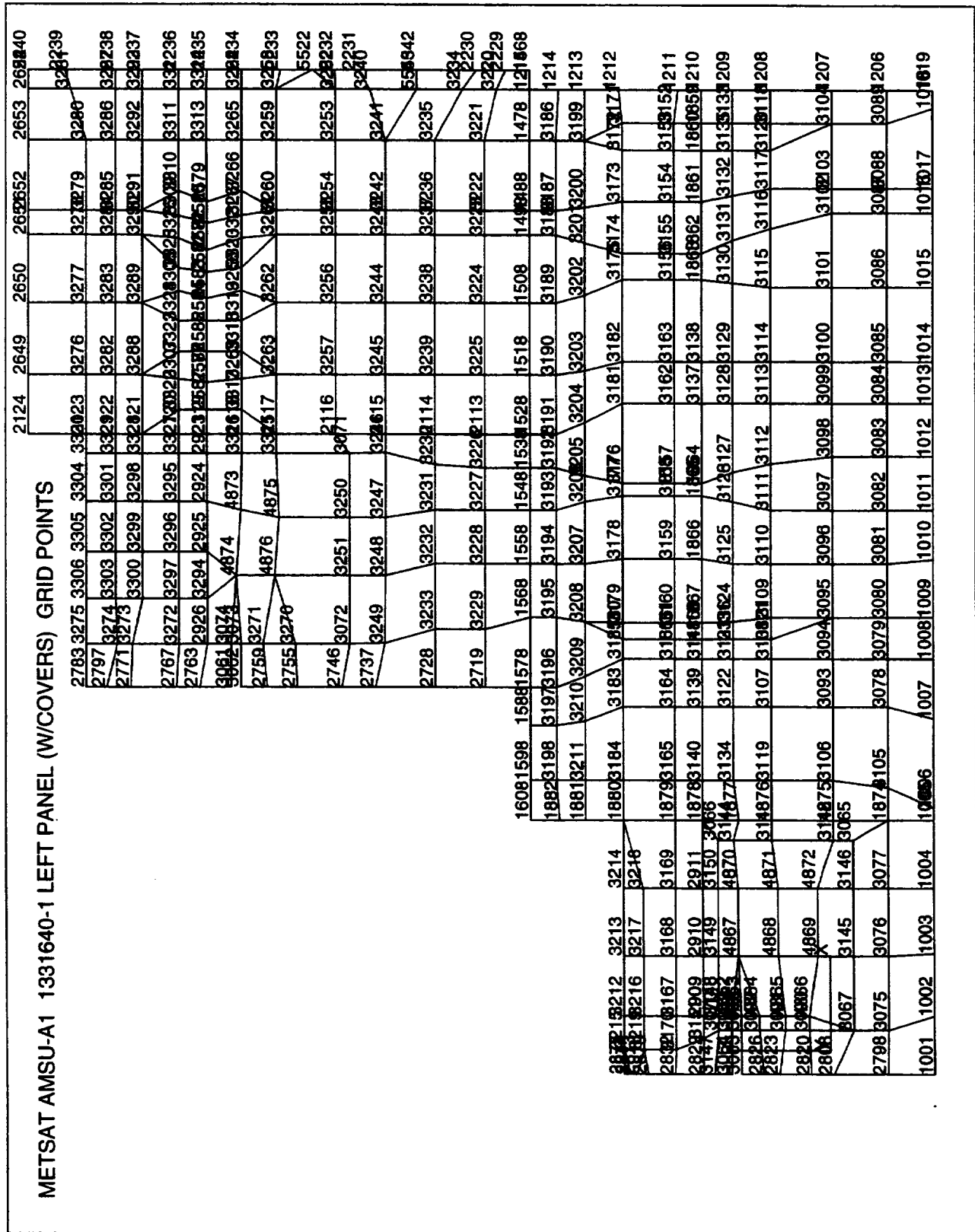


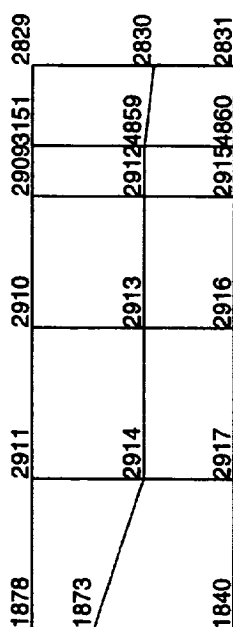
Figure A-65 METSAT AMSU-A1 1331640-1 Left Panel (W/Covers) Mesh Only



METSAT AMSU-A1 1331640-1 LEFT PANEL (W/COVERS) SHELL ELEMENTS

3129	3181	3182	3133	3134	3531	36	3137	3138	3139	3140	3141	3149
3146	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3142
3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3112
3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	3091	3095
3066	3067	3068	3069	3070	3071	3072	3073	3074	3075	3076	3077	3098
3052	3053	3054	3055	3056	3057	3058	3059	3060	3061	3062	3063	3065
3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3055
3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3043
3018	3019	3020	3021	3022	3023	3024	3025	3026	3027	3028	3029	3031
2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3007
2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992
2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978
2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962
2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948
2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934
2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920
2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906
2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892
2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878
2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864
2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850
2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836
2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822
2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808

Figure A-67 METSAT AMSU-A1 1331640-1 Left Panel (W/Covers) Shell Elements



METSAT AMSU-A1 1331405-1 LOWER LEFT SHIELD GRID POINTS

METSAT AMSU-A1 1331405-1 LOWER RIGHT SHIELD GRID POINTS

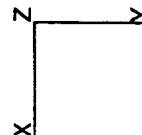
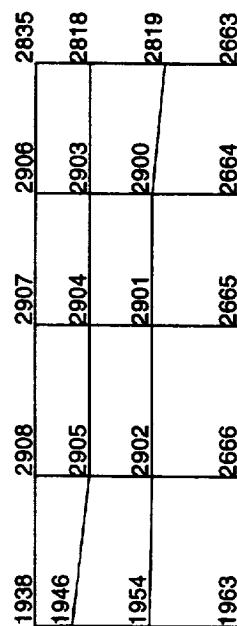


Figure A-68 METSAT AMSU-A1 1331405-1 Lower Left Shield Grid Points

Figure A-69 METSAT AMSU-A1 1331405-1 Lower Right Shield Grid Points

2638	2639	2640	4928 2641
2634	2635	2636	4929 2637

METSAT AMSU-A1 1331445-1 LOWER LEFT SHIELD SHELL ELEMENTS

METSAT AMSU-A1 1331405-1 LOWER RIGHT SHIELD SHELL ELEMENTS

2616	2617	2618	2619
2612	2613	2614	2615
2608	2609	2610	2611

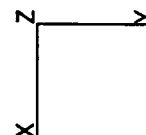


Figure A-70 METSAT AMSU-A1 1331445-1 Lower Left Shield Shell Elements

Figure A-71 METSAT AMSU-A1 1331405-1 Lower Right Shield Shell Elements

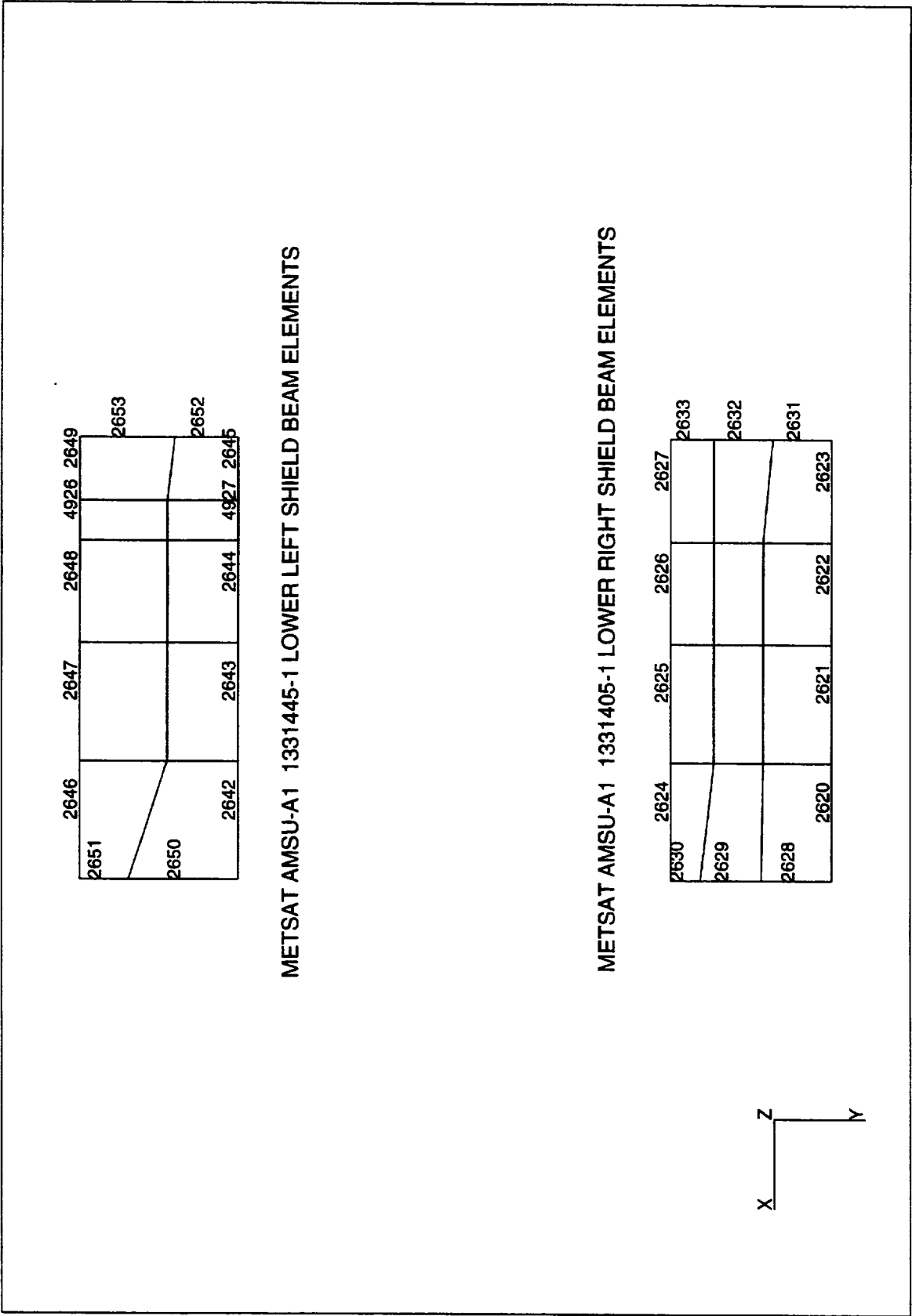
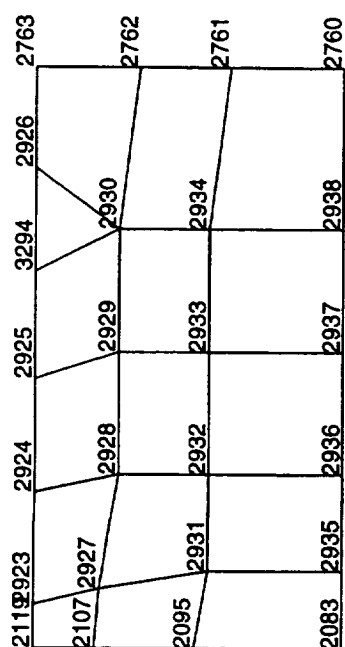


Figure A-72 METSAT AMSU-A1 1331445-1 Lower Left Shield Beam Elements

Figure A-73 METSAT AMSU-A1 1331405-1 Lower Right Shield Beam Elements



METSAT AMSU-A1 1331647-1 UPPER LEFT SHIELD GRID POINTS

METSAT AMSU-A1 1331646-1 UPPER RIGHT SHIELD GRID POINTS

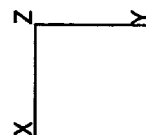
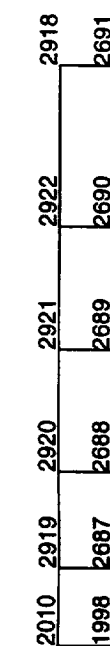


Figure A-74 METSAT AMSU-A1 1331647-1 Upper Left Shield Grid Points
Figure A-75 METSAT AMSU-A1 1331646-1 Upper Right Shield Grid Points

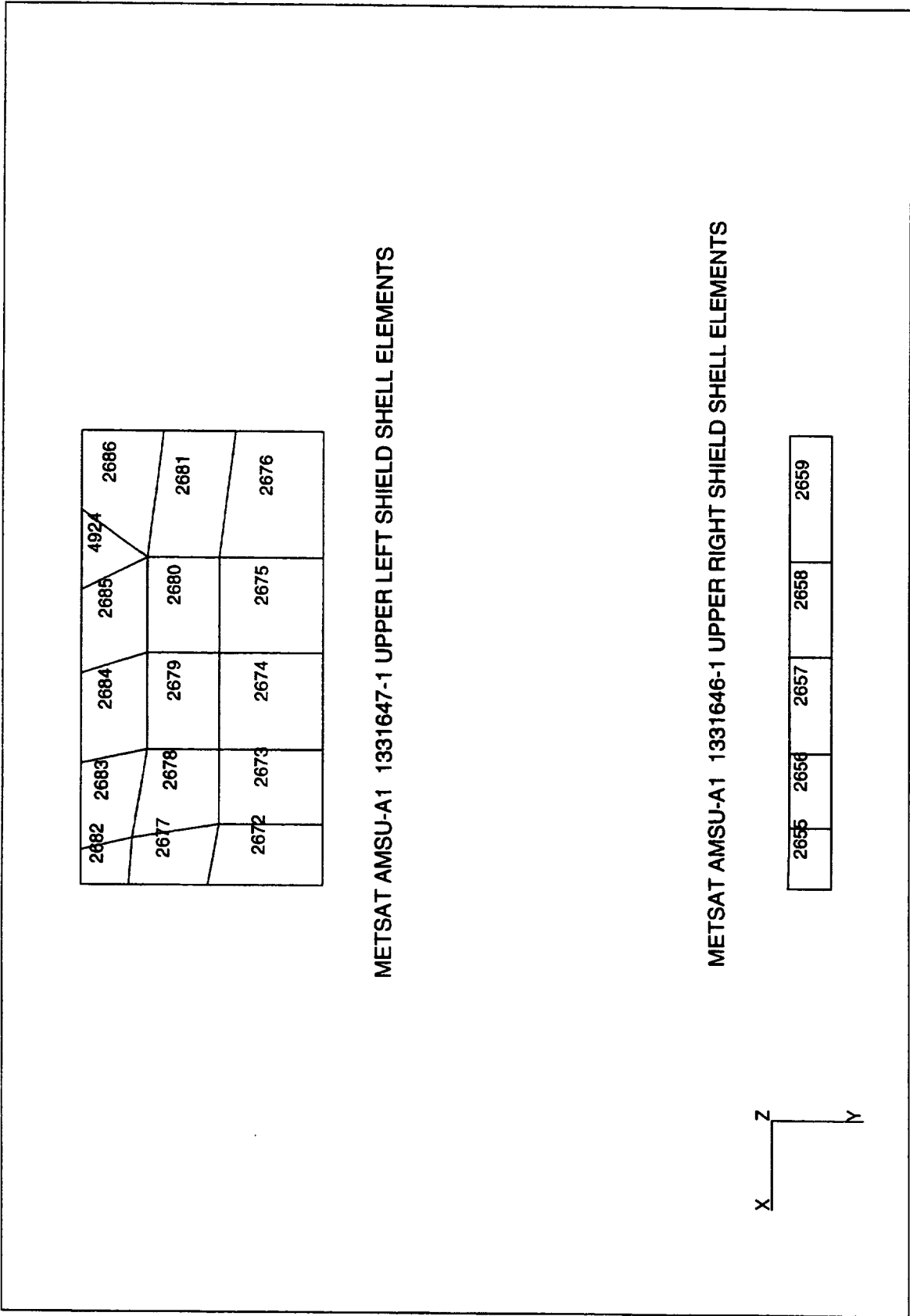
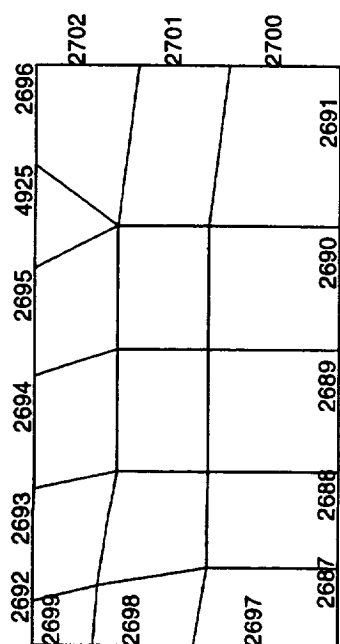


Figure A-76 METSAT AMSU-A1 1331647-1 Upper Left Shield Shell Elements
Figure A-77 METSAT AMSU-A1 1331646-1 Upper Right Shield Shell Elements



METSAT AMSU-A1 1331647-1 UPPER LEFT SHIELD BEAM ELEMENTS

METSAT AMSU-A1 1331646-1 UPPER RIGHT SHIELD BEAM ELEMENTS

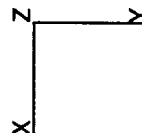
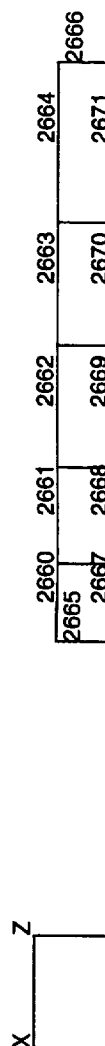


Figure A-78 METSAT AMSU-A1 1331647-1 Upper Left Shield Beam Elements

Figure A-79 METSAT AMSU-A1 1331646-1 Upper Right Shield Beam Elements

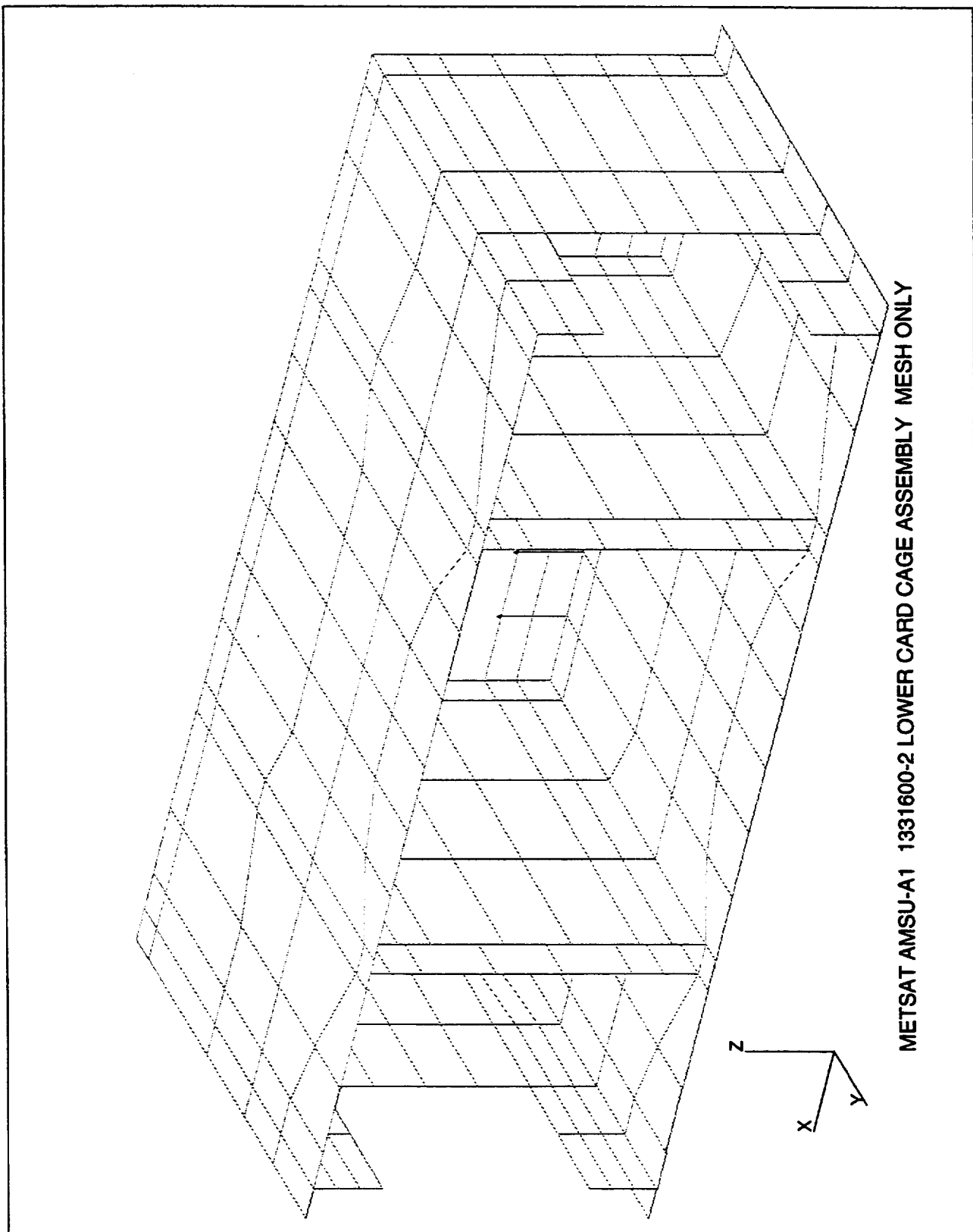


Figure A-80 METSAT AMSU-A1 1331600-2 Lower Card Cage Assembly Mesh Only

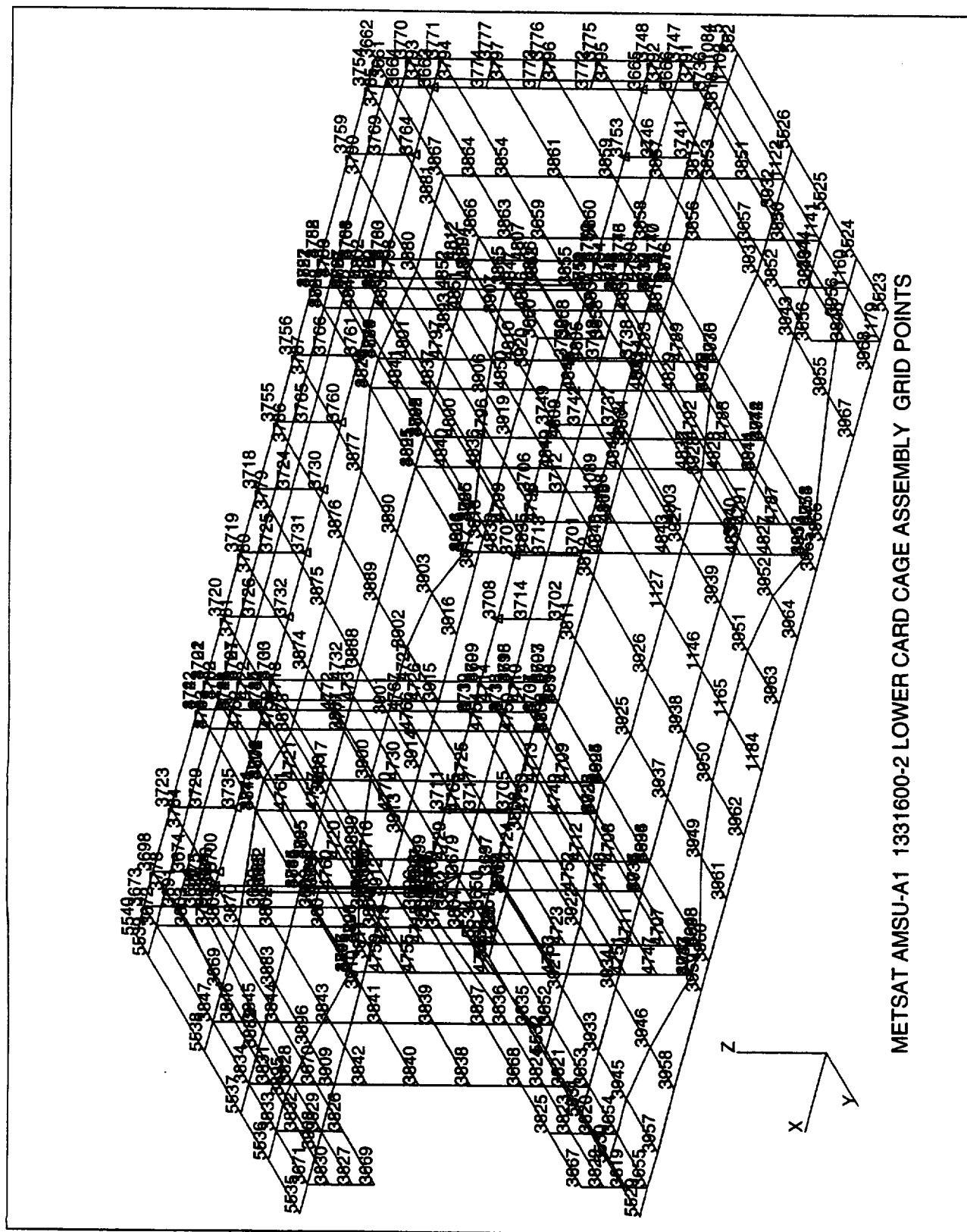


Figure A-81 METSAT AMSU-A1 1331600-2 Lower Card Cage Assembly Grid Points

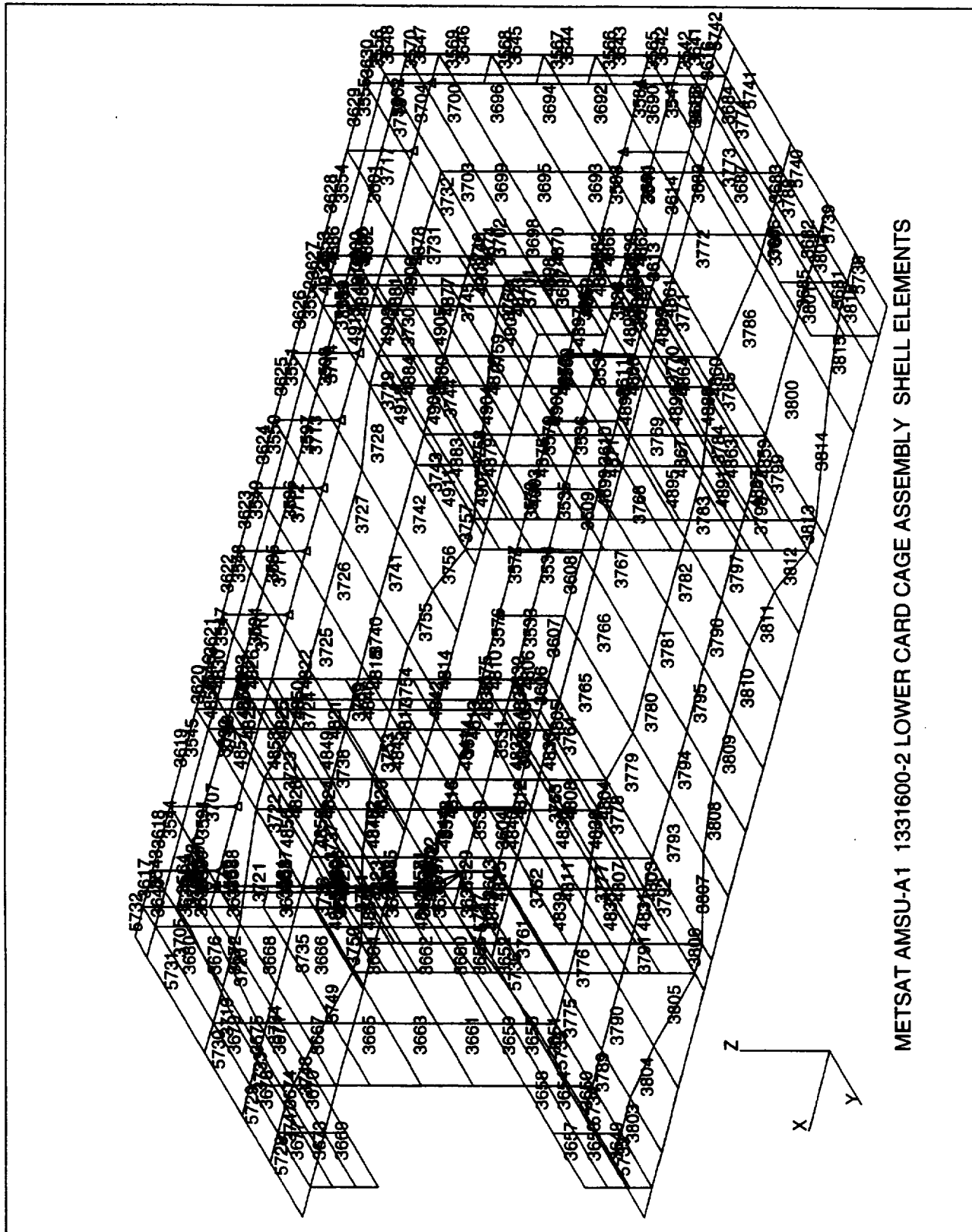
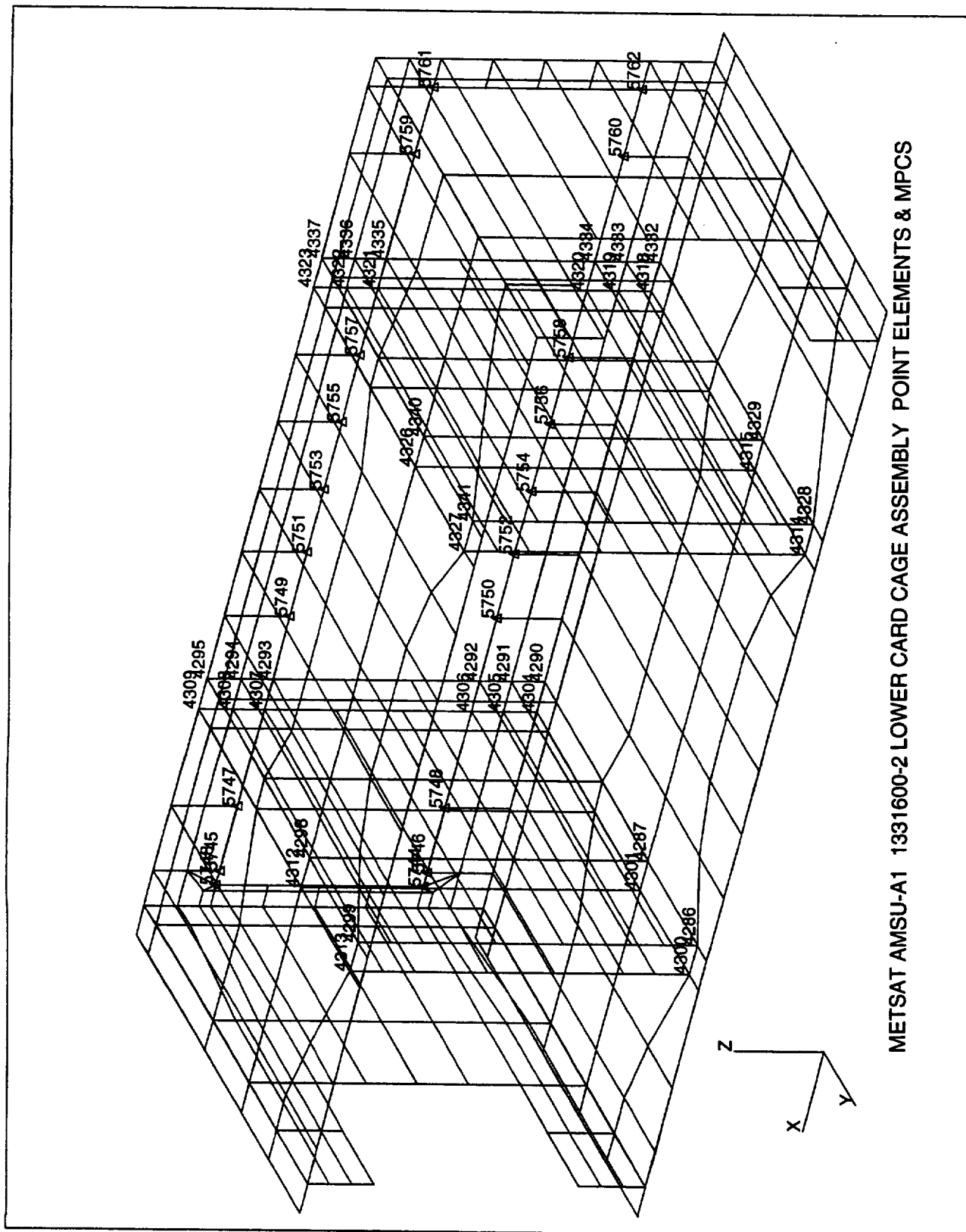


Figure A-82 METSAT AMSU-A1 1331600-2 Lower Card Cage Assembly Shell Elements



METSAT AMSU-A1 1331600-2 LOWER CARD CAGE ASSEMBLY POINT ELEMENTS & MPCS

Figure A-83 METSAT AMSU-A1 1331600-2 Lower Card Cage Assembly Point Elements & MPCS

4826	4825	4824	4823	4822
4911	4912	4913	4914	4915
4839	4840	4841	4842	4843
4907	4908	4909	4910	4911
4835	4836	4837	4838	4839
4903	4904	4905	4906	4907
4848	4849	4850	4851	4852
4899	4900	4901	4902	4903
4843	4844	4845	4846	4847
4895	4896	4897	4898	4899
4837	4838	4839	4840	4841
4891	4892	4893	4894	4895
4827	4828	4829	4830	4831
4887	4888	4889	4890	4891
4813	4814	4815	4816	4817

METSAT AMSU-A1 1331600-1 LOWER CARD CAGE CARD 1 - GRIDS & SHELLS

Figure A-84 METSAT AMSU-A1 1331600-1 Lower Card Cage Card 1 Grids & Shells

4786	4785	4784	4783	4782
4883	4884	4885	4886	4887
4799	4800	4801	4802	4781
4795	4796	4797	4798	4780
4875	4876	4877	4878	
4808	4809	4810	4811	4812
4871	4872	4873	4874	
4803	4804	4805	4806	4807
4867	4868	4869	4870	
4784	4792	4793	4794	4779
4863	4864	4865	4866	
4787	4788	4789	4790	4778
4859	4860	4861	4862	
4773	4774	4775	4776	4777

Y

K

METSAT AMSU-A1 1331600-1 LOWER CARD CAGE CARD 2 - GRIDS & SHELLS

Figure A-85 METSAT AMSU-A1 1331600-1 Lower Card Cage Card 2 Grids & Shells

4706	4705	4704	4703	4702
4827	4828	4829	4830	
4719	4720	4721	4722	4701
4823	4824	4825	4826	
4715	4716	4717	4718	4700
4819	4820	4821	4822	
4728	4729	4730	4731	4732
4815	4816	4817	4818	
4723	4724	4725	4726	4727
4811	4812	4813	4814	
4714	4712	4713	4714	4699
4807	4808	4809	4810	
4707	4708	4709	4710	4698
4803	4804	4805	4806	
4693	4694	4695	4696	4697

Y

X

METSAT AMSU-A1 1331600-1 LOWER CARD CAGE CARD 3 - GRIDS & SHELLS

Figure A-86 METSAT AMSU-A1 1331600-1 Lower Card Cage Card 3 Grids & Shells

4746	4745	4744	4743	4742
4855	4856	4857	4858	
4759	4760	4761	4762	4741
4851	4852	4853	4854	
4755	4756	4757	4758	4740
4847	4848	4849	4850	
4768	4769	4770	4771	4772
4843	4844	4845	4846	
4763	4764	4765	4766	4767
4839	4840	4841	4842	
4757	4752	4753	4754	4739
4835	4836	4837	4838	
4747	4748	4749	4750	4738
4831	4832	4833	4834	
4733	4734	4735	4736	4737

Y

METSAT AMSU-A1 1331600-1 LOWER CARD CAGE CARD 4 - GRIDS & SHELLS

Figure A-87 METSAT AMSU-A1 1331600-1 Lower Card Cage Card 4 Grids & Shells

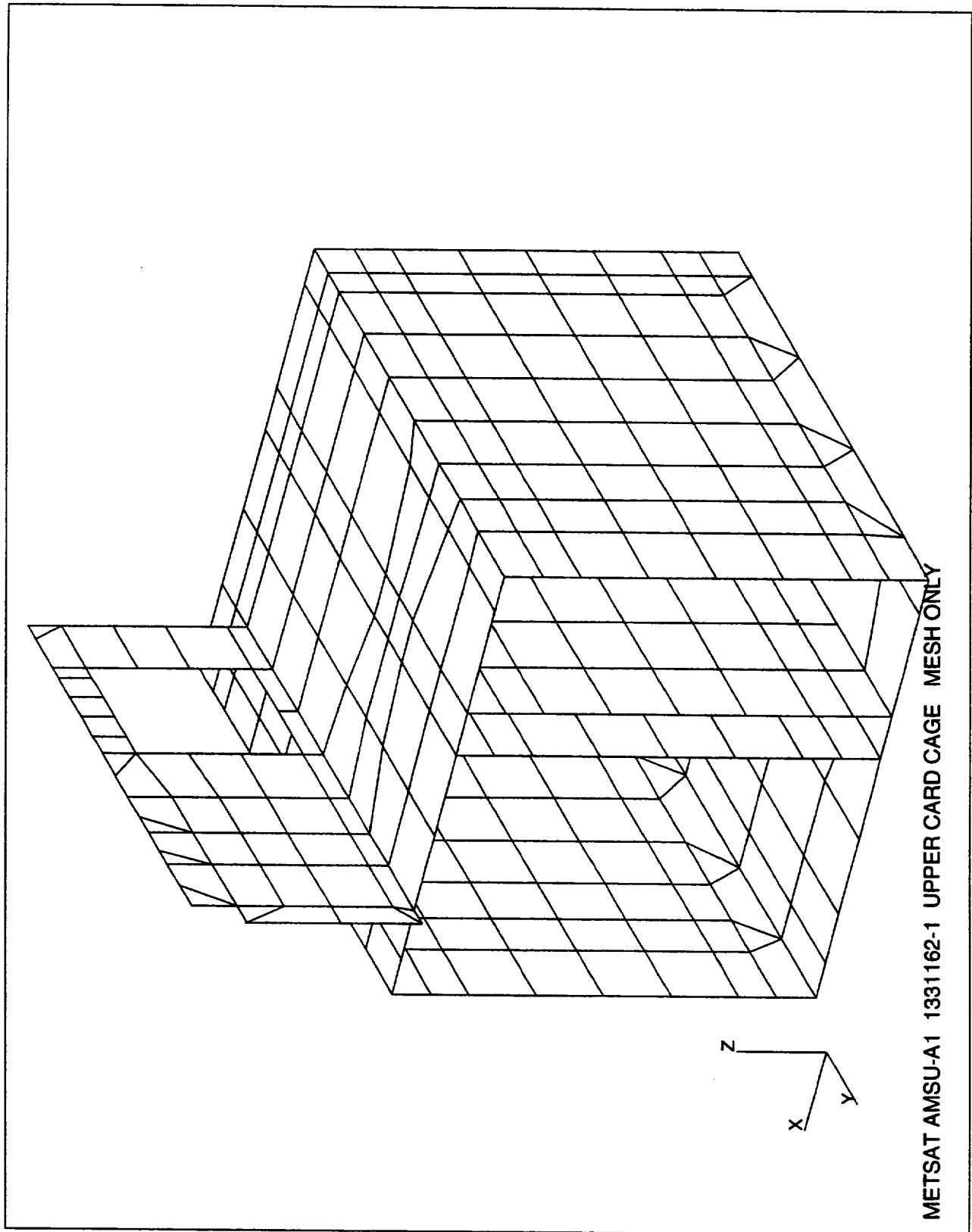


Figure A-88 METSAT AMSU-A1 1331162-1 Upper Card Cage Mesh Only

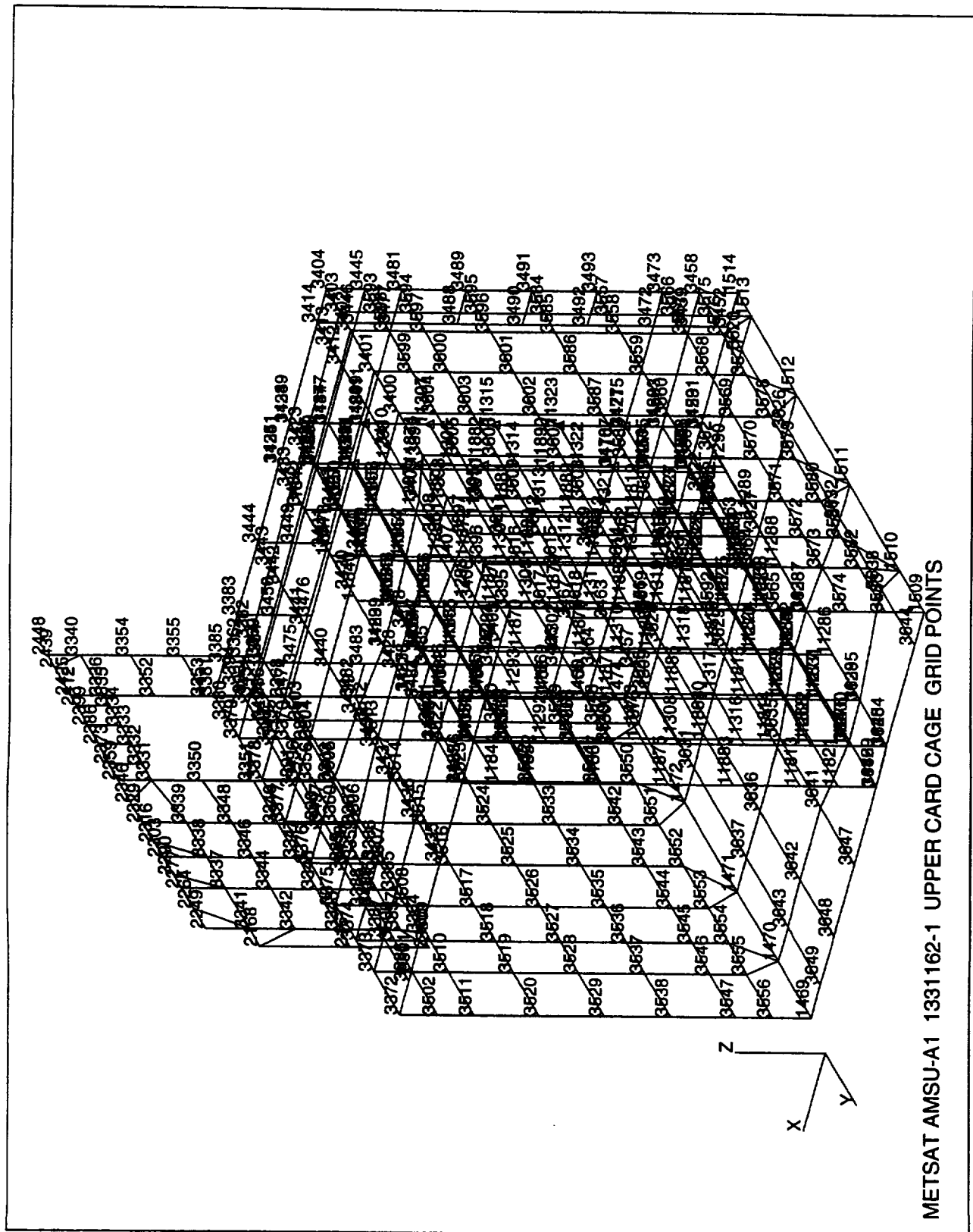


Figure A-89 METSAT AMSU-A1 1331162-1 Upper Card Cage Grid Points

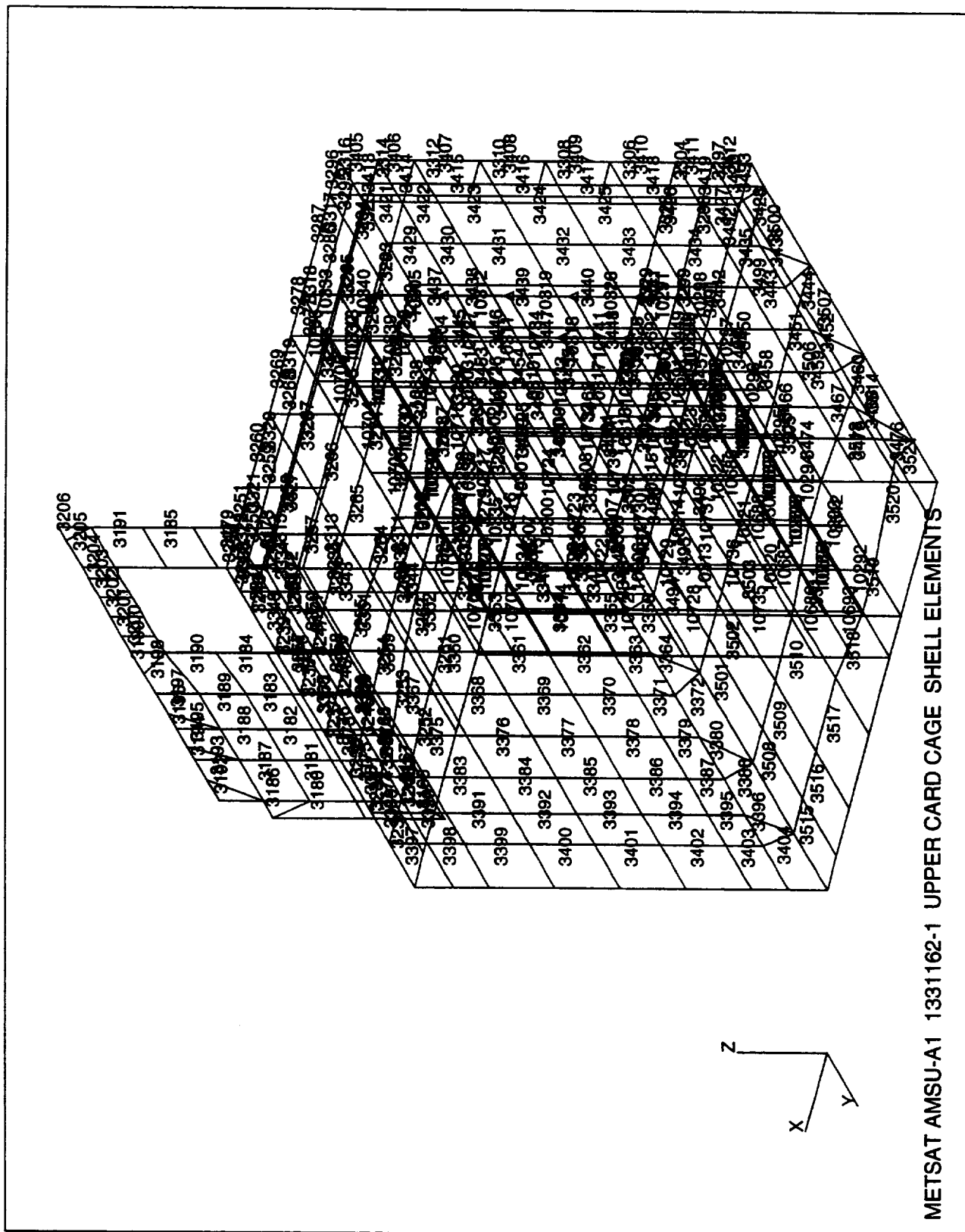


Figure A-90 METSAT AMSU-A1 1331162-1 Upper Card Cage Shell Elements

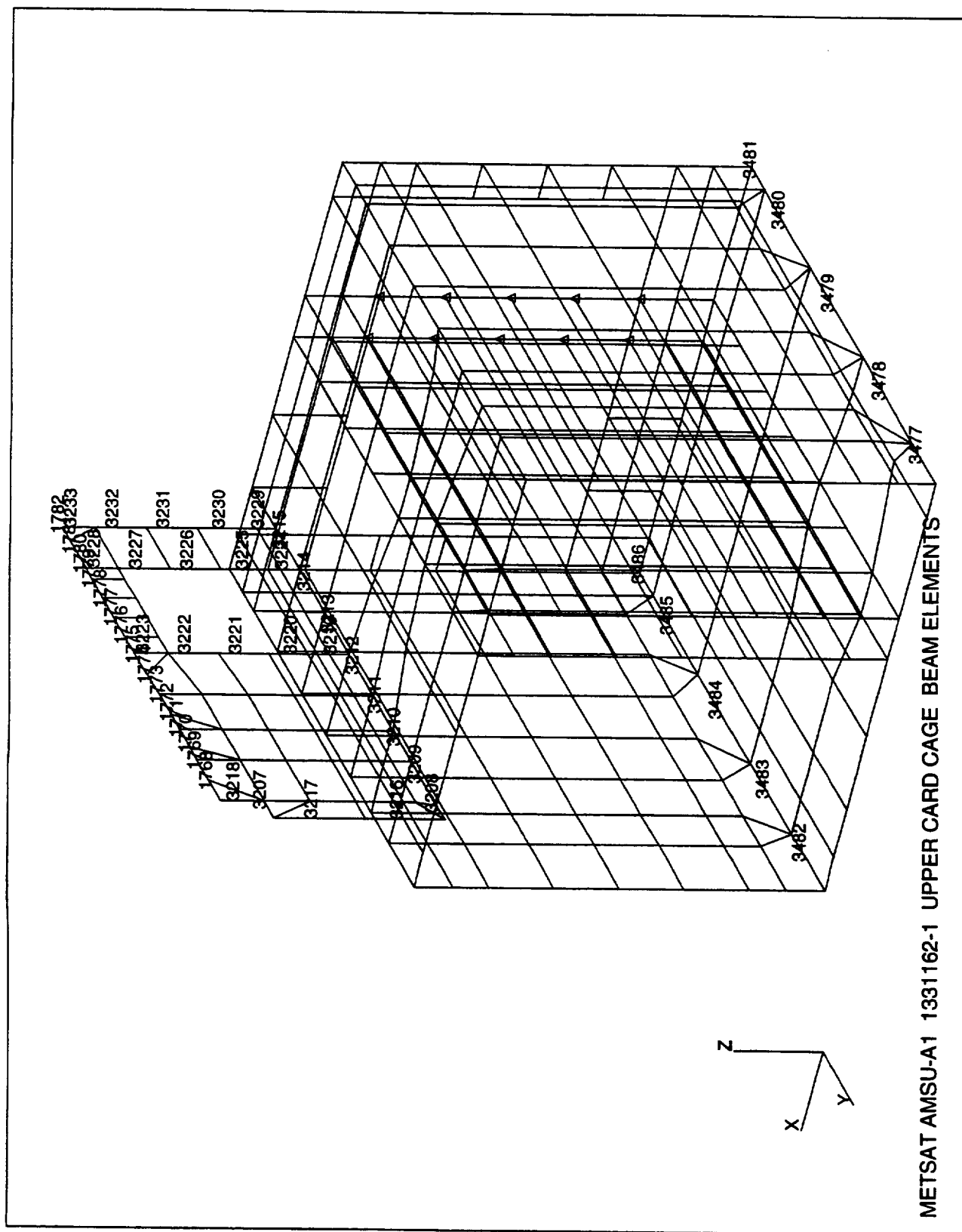


Figure A-91 METSAT AMSU-A1 1331162-1 Upper Card Cage Beam Elements

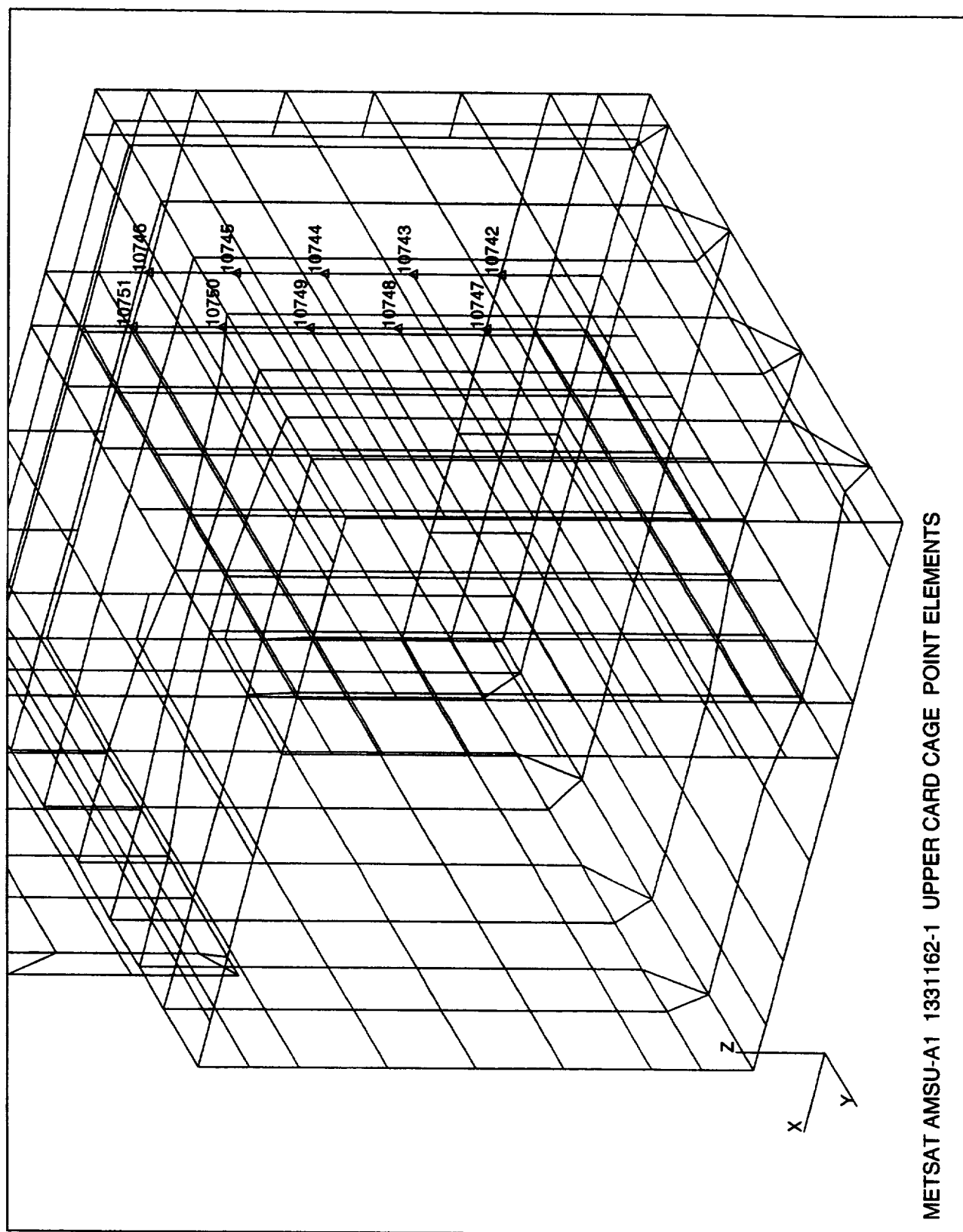


Figure A-92 METSAT AMSU-A1 1331162-1 Upper Card Cage Point Elements

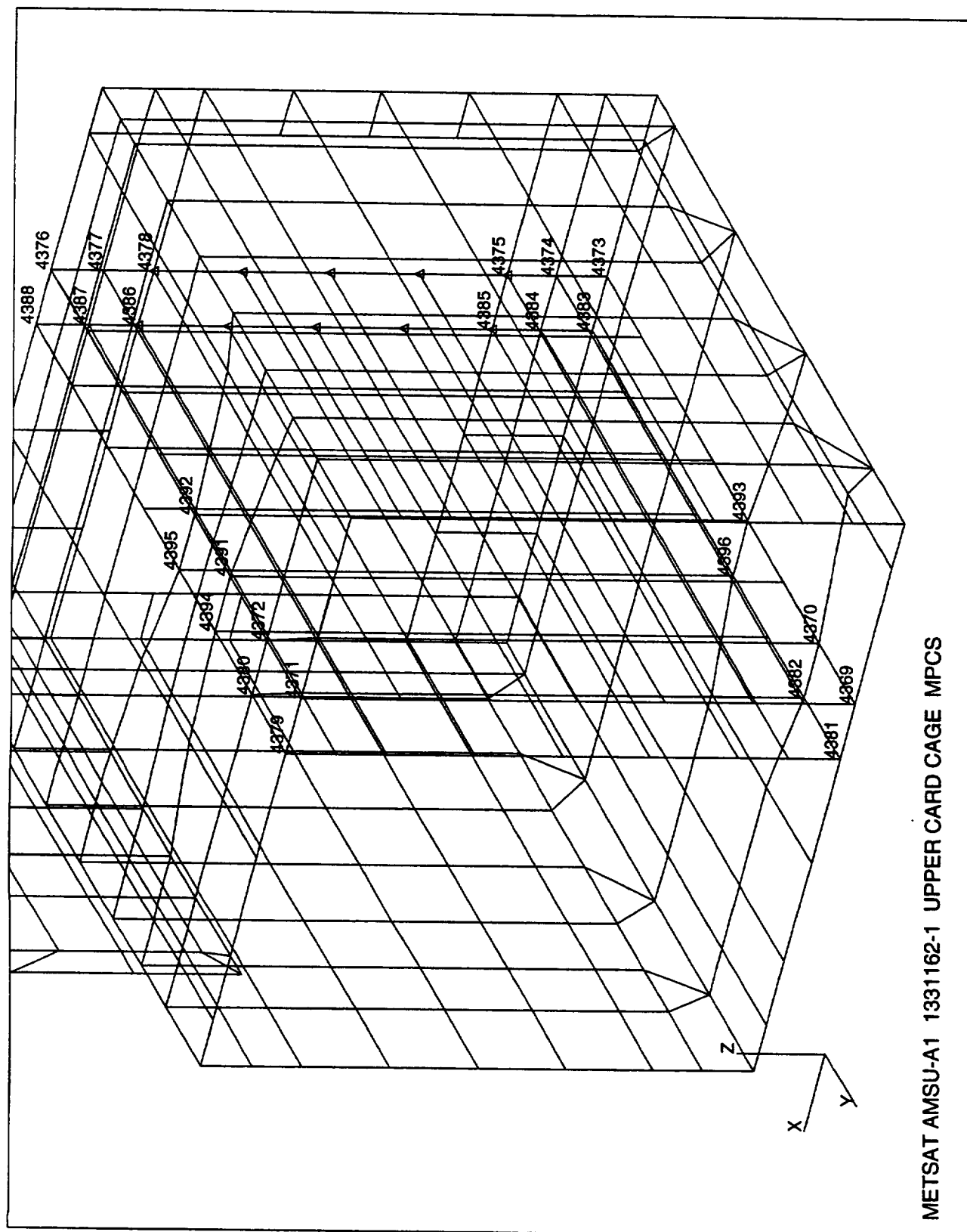


Figure A-93 METSAT AMSU-A1 1331162-1 Upper Card Cage MPCs

11836	11837	11838	11839	11840	11841	11842	11251
10700	10701	10702	10703	10704	10705	10706	
11844	11845	11846	11847	11848	11849	11850	11259
10707	10708	10709	10710	10711	10712	10713	
11852	11853	11854	11855	11856	11857	11858	11211
10714	10715	10716	10717	10718	10719	10720	
11867	11868	11869	11870	11871	11872	11873	11874
10721	10722	10723	10724	10725	10726	10727	
11875	11876	11877	11878	11879	11880	11881	11882
10728	10729	10730	10731	10732	10733	10734	
11883	11884	11885	11886	11887	11888	11889	11890
10735	10736	10737	10738	10739	10740	10741	
11813	11814	11815	11816	11817	11818	11819	11187
10686	10687	10688	10689	10690	10691	10692	
11821	11822	11823	11824	11825	11826	11827	11195
10693	10694	10695	10696	10697	10698	10699	
11829	11830	11831	11832	11833	11834	11835	11203

METSAT AMSU-A1 1331162-1 UPPER CARD CAGE CARD (+X) GRIDS & SHELLS

Figure A-94 METSAT AMSU-A1 1331162-1 Upper Card Cage Card (+X) Grids & Shells

11332	11333	11334	11335	11336	11337	11338	11339
10327	10328	10329	10330	10331	10332	10333	
11340	11341	11342	11343	11344	11345	11346	11347
10334	10335	10336	10337	10338	10339	10340	
11292	11293	11294	11295	11296	11297	11298	11299
10299	10300	10301	10302	10303	10304	10305	
11300	11301	11302	11303	11304	11305	11306	11307
10306	10307	10308	10309	10310	10311	10312	
11308	11309	11310	11311	11312	11313	11314	11315
10313	10314	10315	10316	10317	10318	10319	
11316	11317	11318	11319	11320	11321	11322	11323
10320	10321	10322	10323	10324	10325	10326	
11268	11269	11270	11271	11272	11273	11274	11275
10285	10286	10287	10288	10289	10290	10291	
11276	11277	11278	11279	11280	11281	11282	11283
10292	10293	10294	10295	10296	10297	10298	
11284	11285	11286	11287	11288	11289	11290	11291

Y

X

METSAT AMSU-A1 1331162-1 UPPER CARD CAGE CARD (-X) GRIDS & SHELLS

Figure A-95 METSAT AMSU-A1 1331162-1 Upper Card Cage Card (-X) Grids & Shells

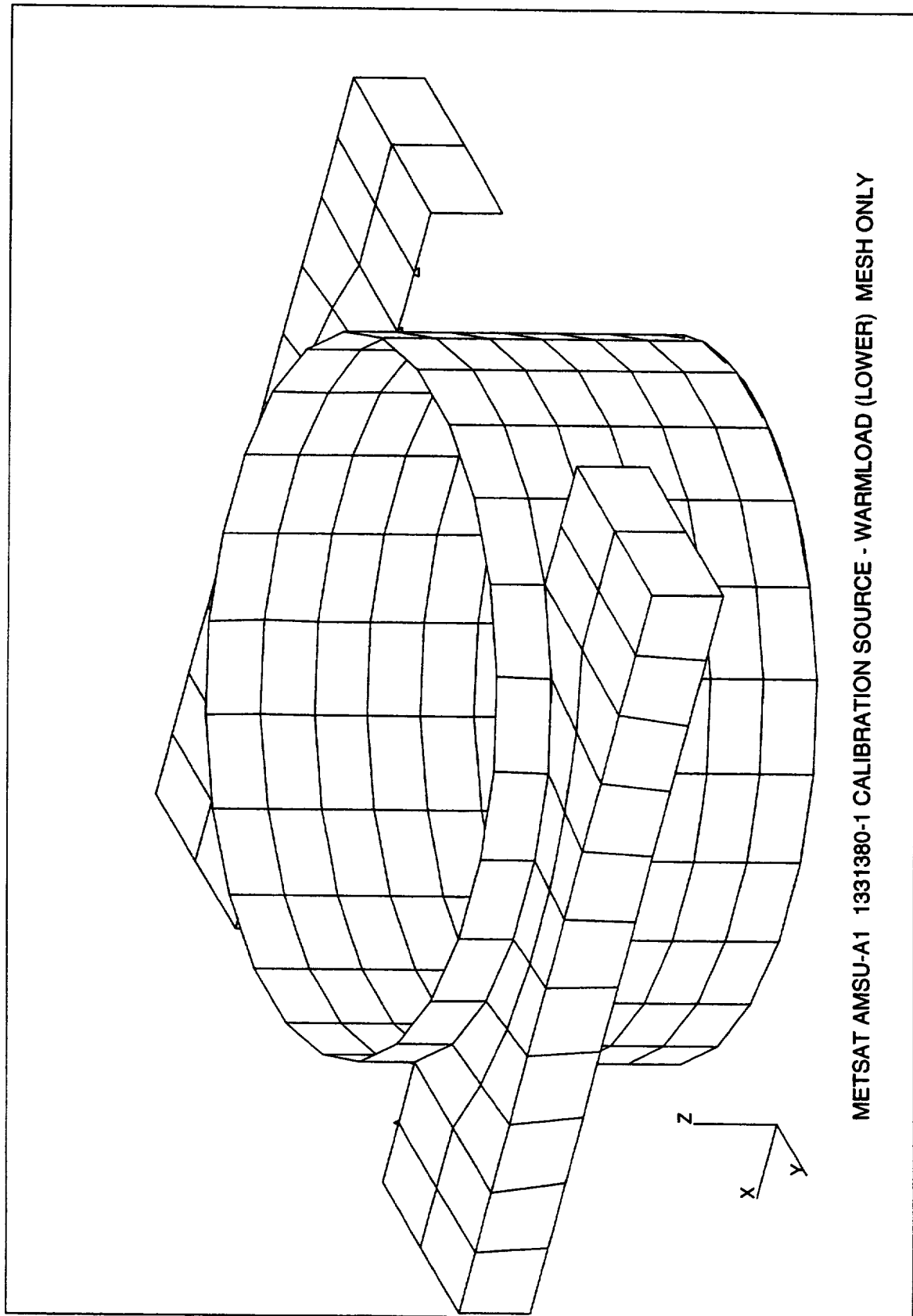


Figure A-96 METSAT AMSU-A1 1331380-1 Calibration Source - Warmload (Lower) Mesh Only

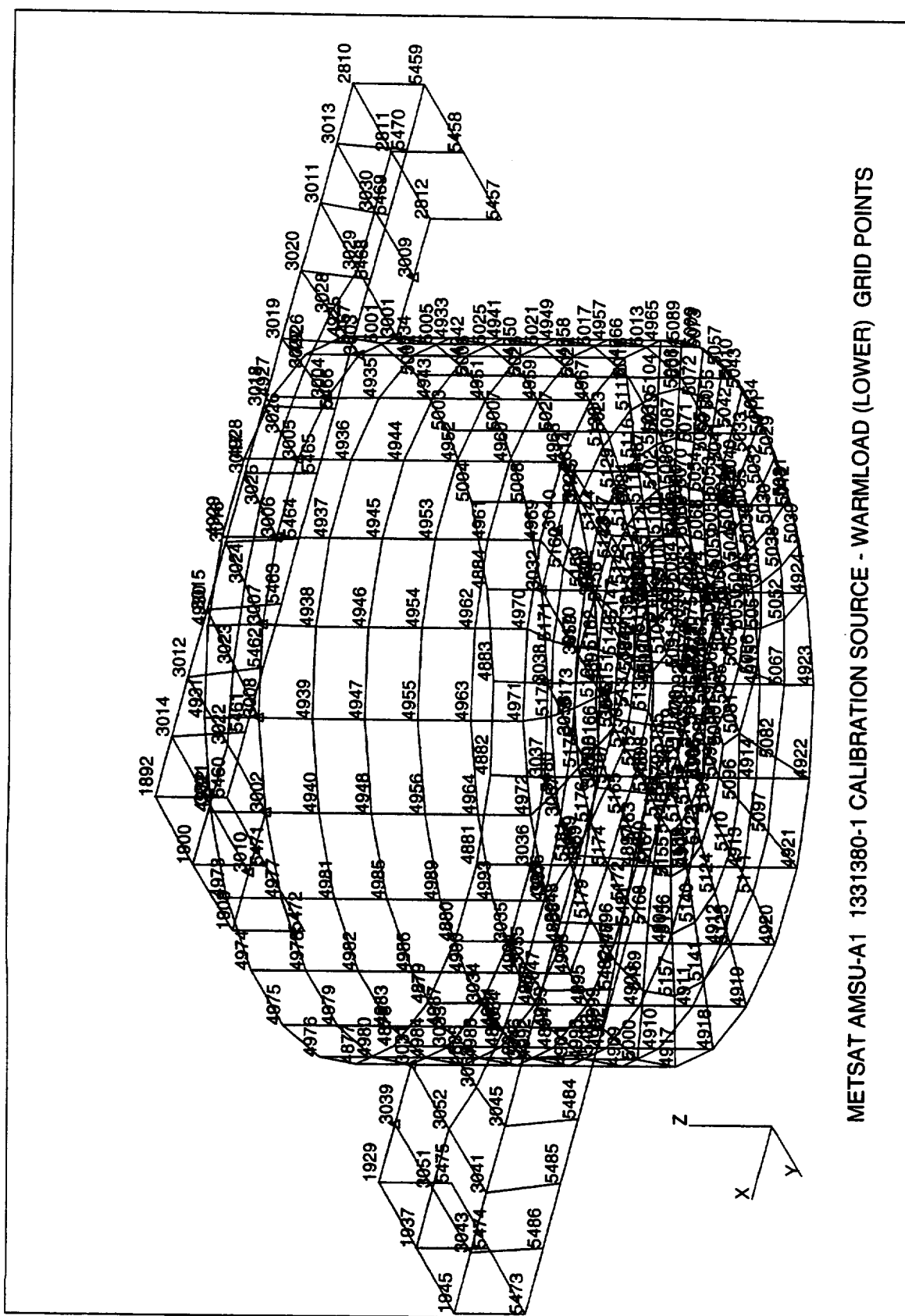
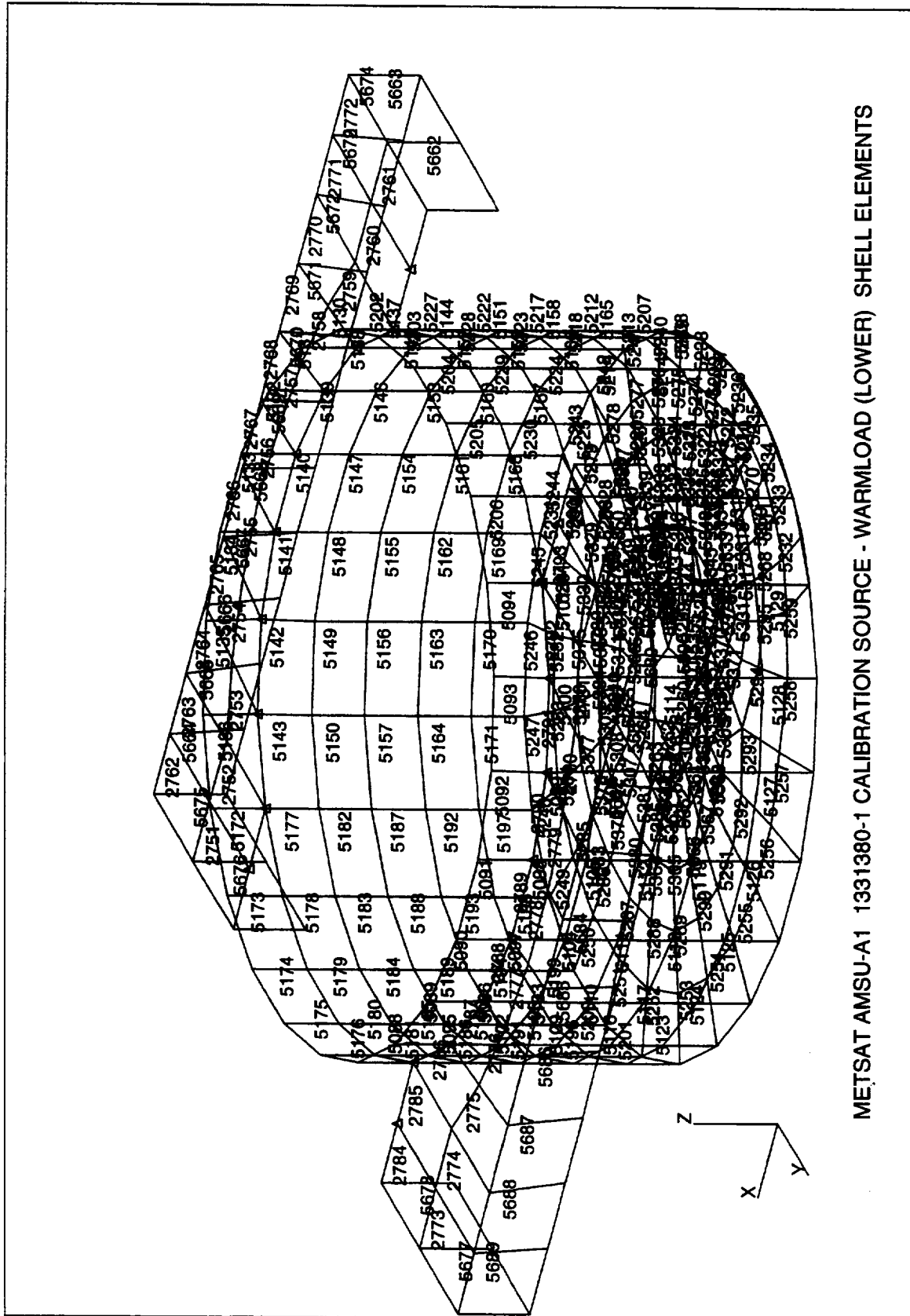


Figure A-97 METSAT AMSU-A1 1331380-1 Calibration Source - Warmload (Lower) Grid Points



METSAT AMSU-A1 1331380-1 CALIBRATION SOURCE - WARMLOAD (LOWER) SHELL ELEMENTS

Figure A-98 METSAT AMSU-A1 1331380-1 Calibration Source - Warmload (Lower) Shell Elements

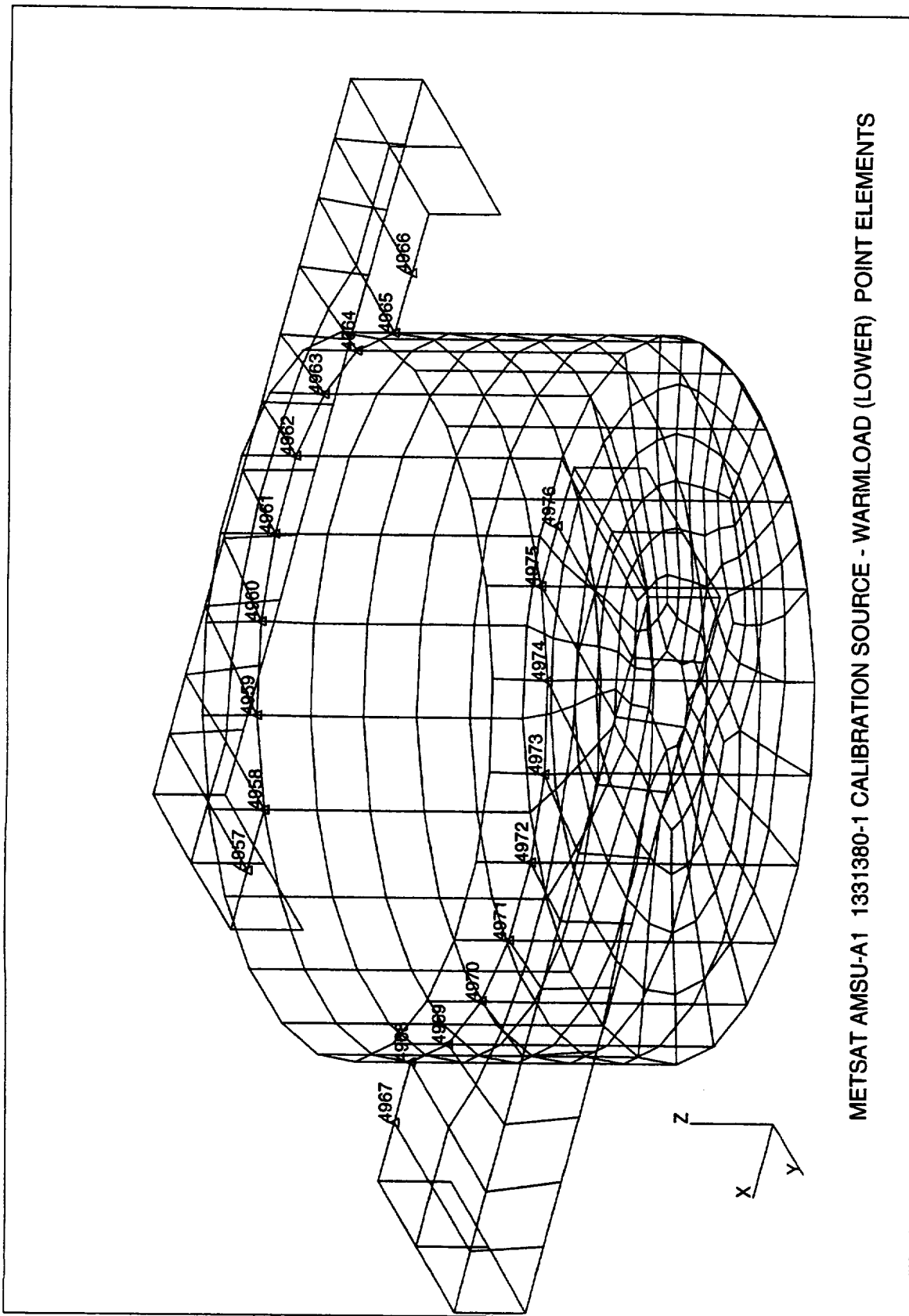


Figure A-99 METSAT AMSU-A1 1331380-1 Calibration Source - Warmload (Lower) Point Elements

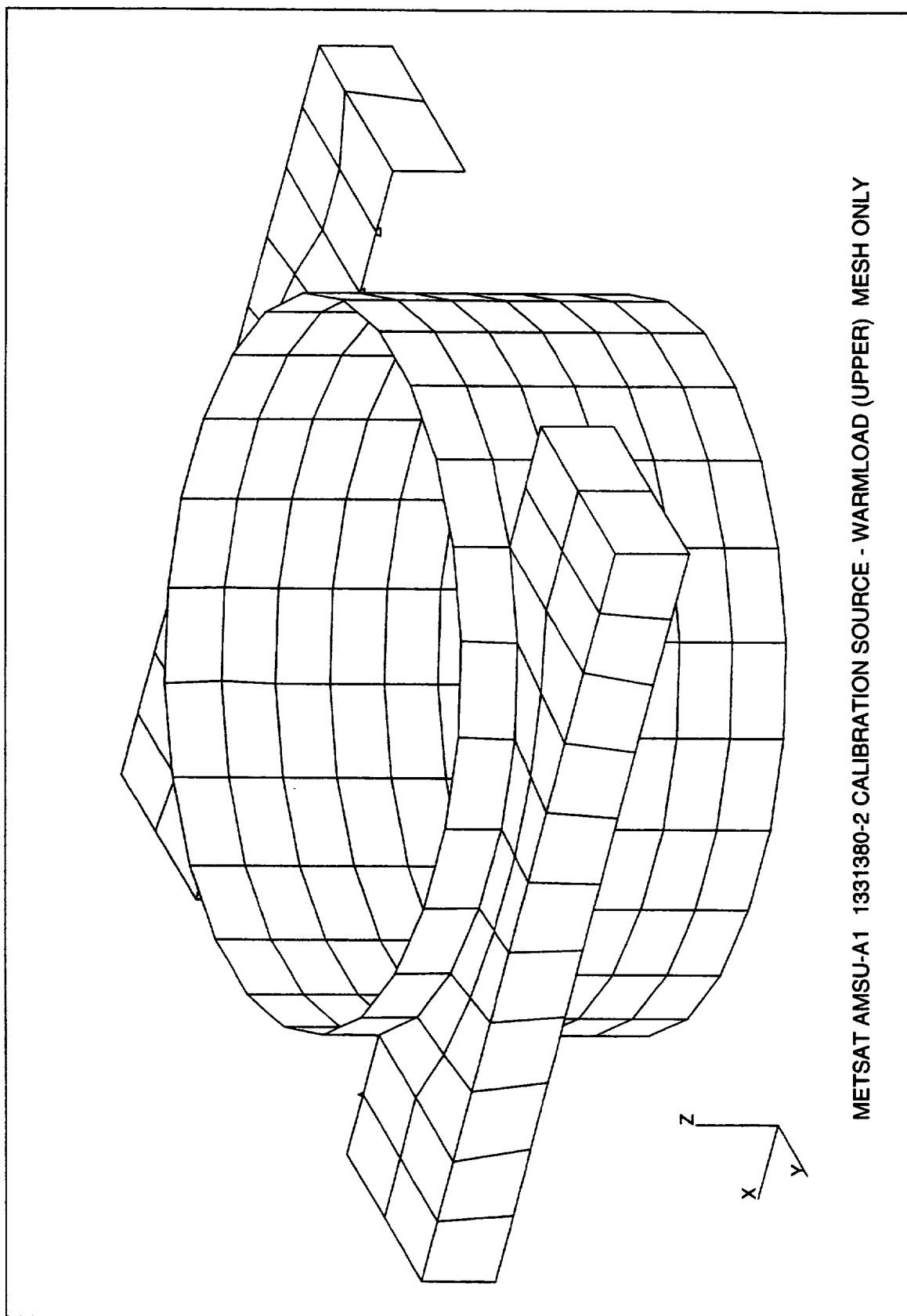
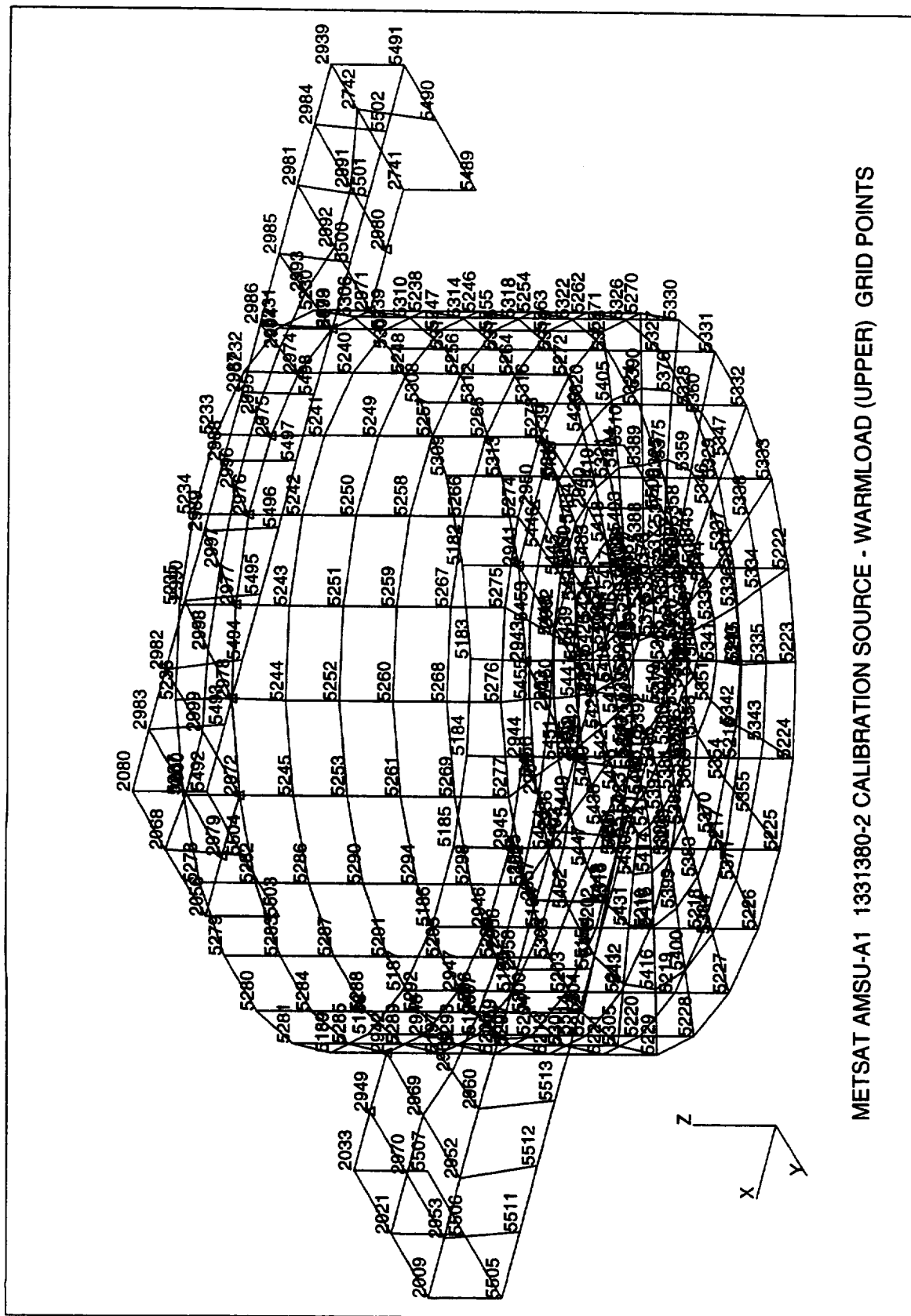


Figure A-100 METSAT AMSU-A1 1331380-2 Calibration Source - Warmload (Upper) Mesh Only



METSAT AMSU-A1 1331380-2 CALIBRATION SOURCE - WARMLOAD (UPPER) GRID POINTS

Figure A-101 METSAT AMSU-A1 1331380-2 Calibration Source - Warmload (Upper) Grid Points

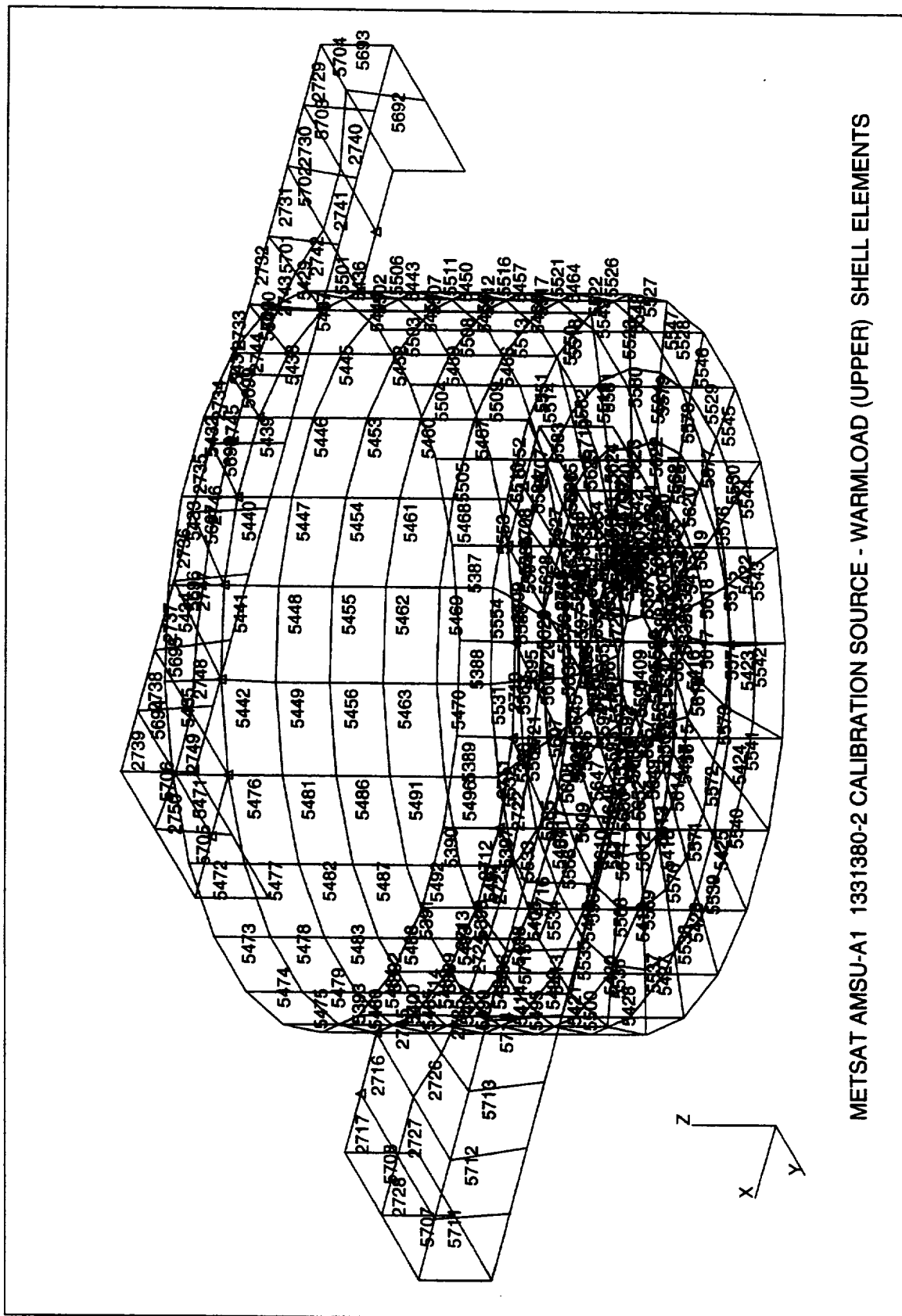


Figure A-102 METSAT AMSU-A1 1331380-2 Calibration Source - Warmload (Upper) Shell Elements

A-101

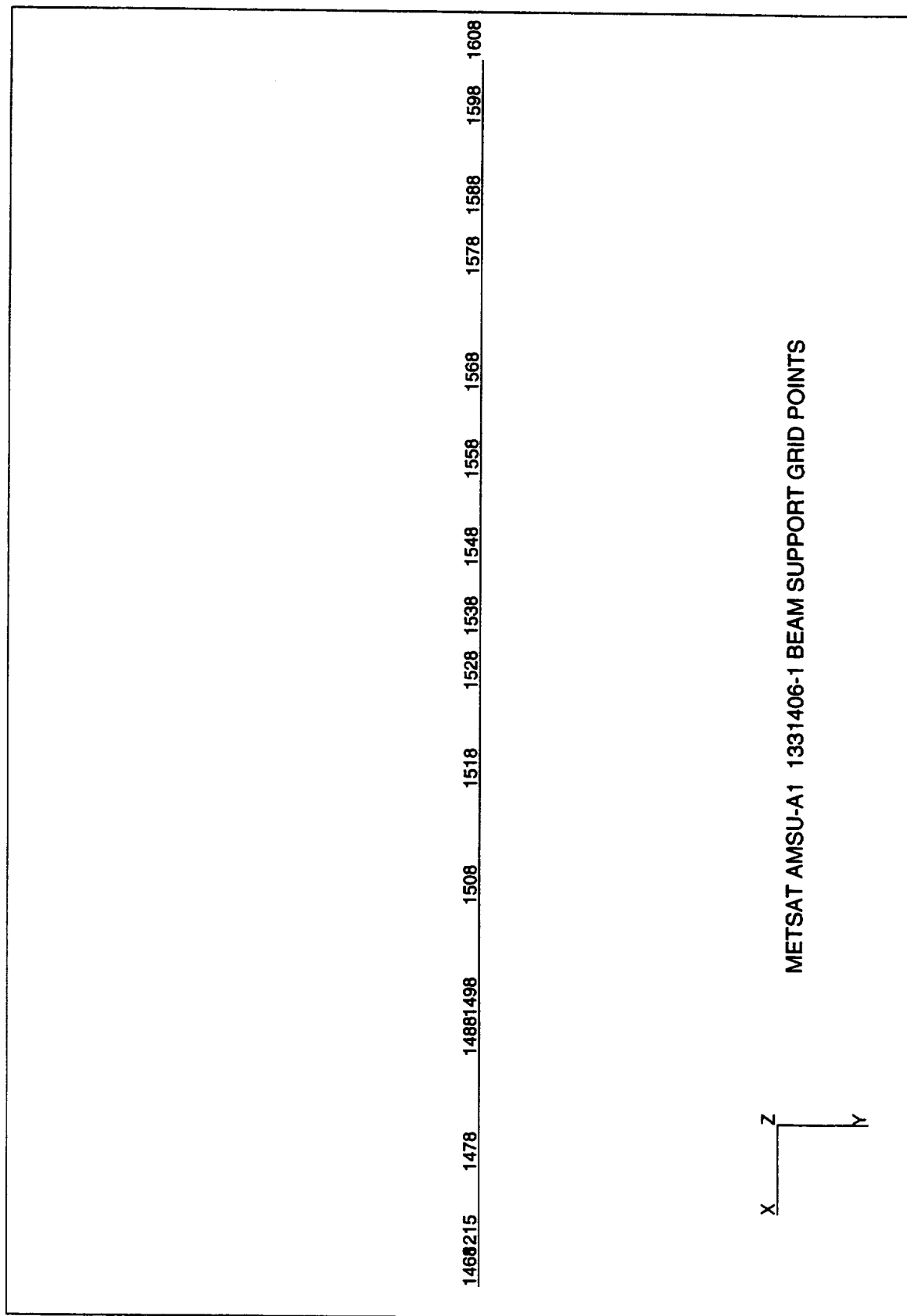


Figure A-104 METSAT AMSU-A1 1331406-1 Beam Support Grid Points

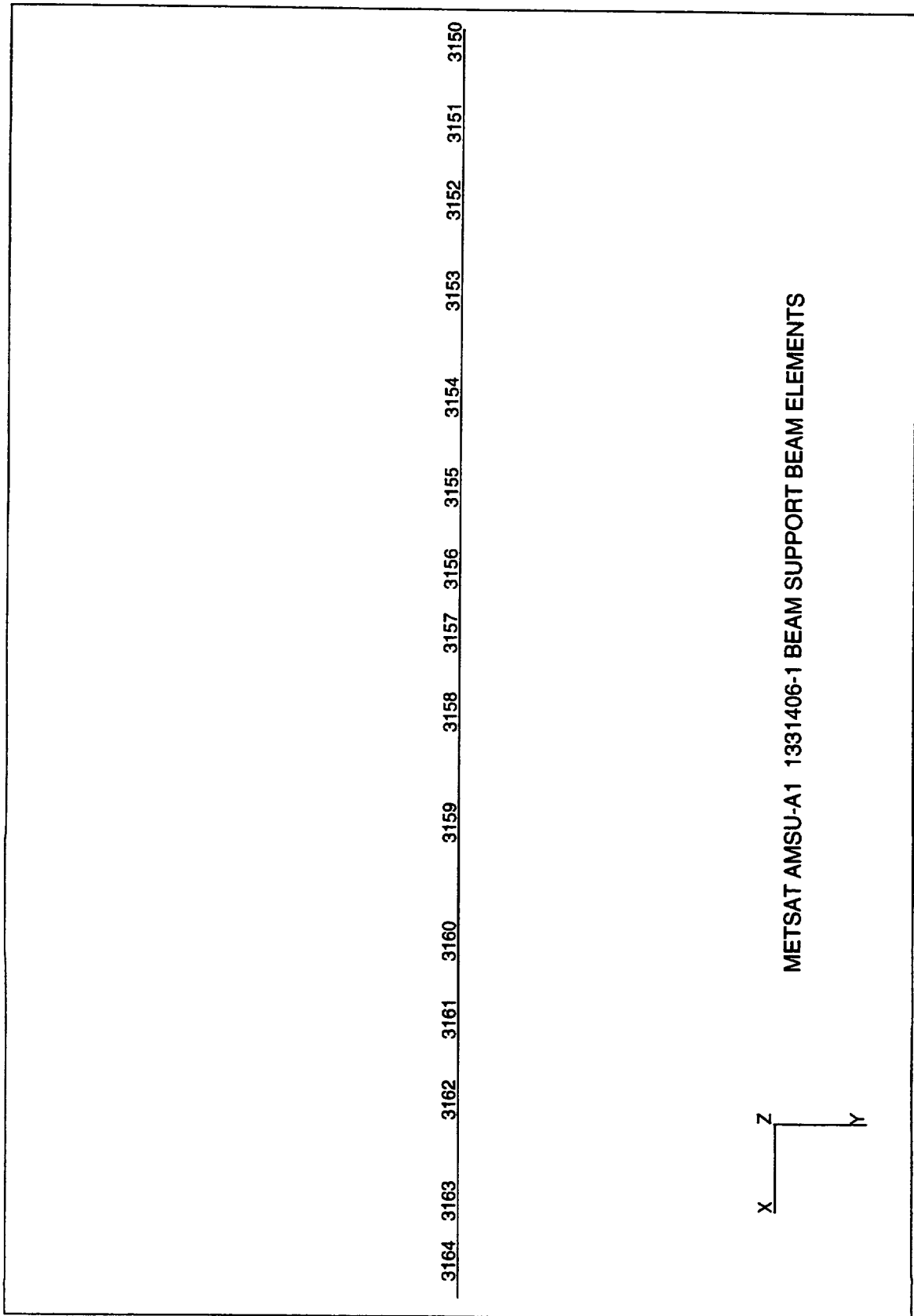


Figure A-105 METSAT AMSU-A1 1331406-1 Beam Support Beam Elements

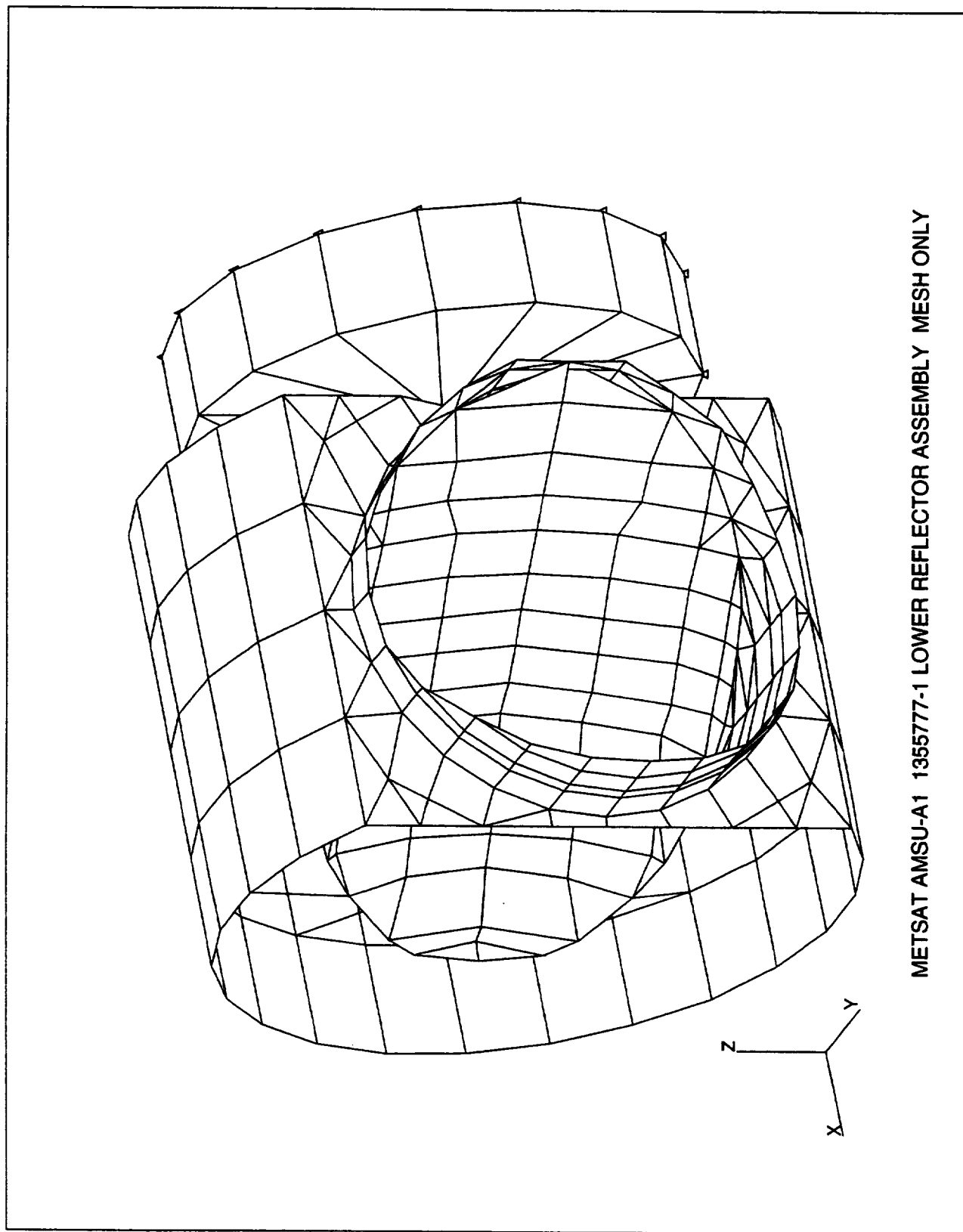


Figure A-106 METSAT AMSU-A1 1355777-1 Lower Reflector Assembly Mesh Only

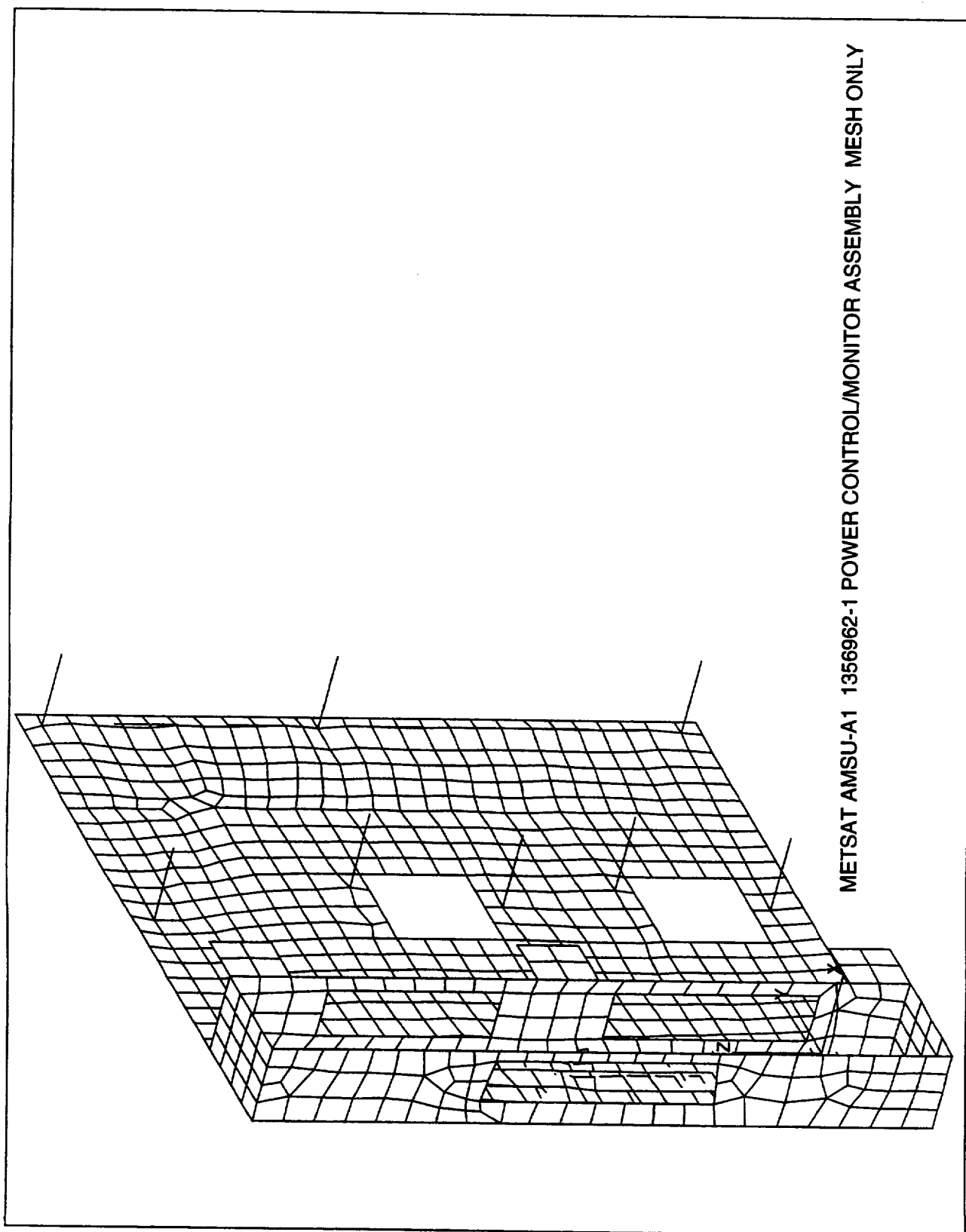


Figure A-107 METSAT AMSU-A1 1356962-1 Power Control/Monitor Assembly Mesh Only

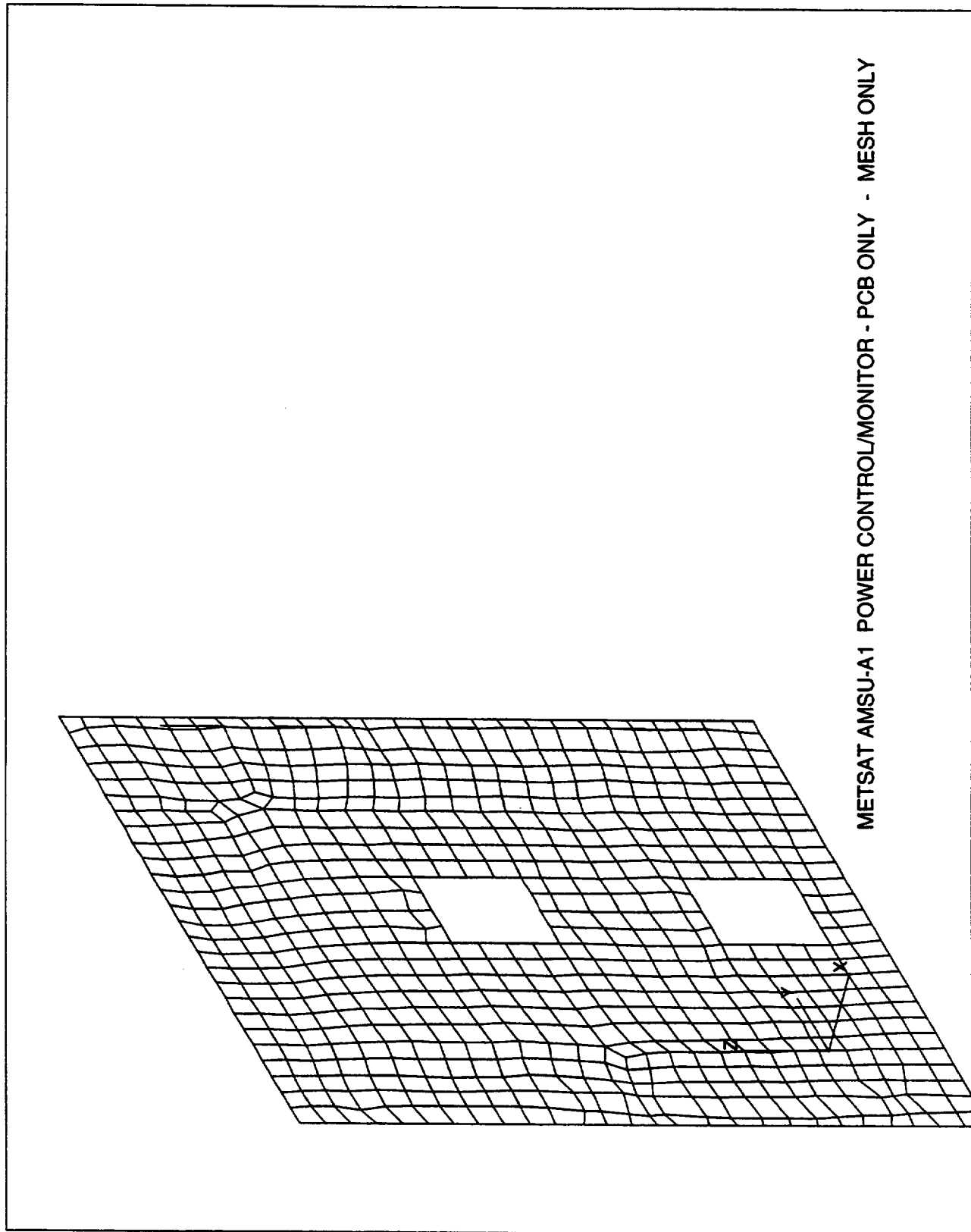


Figure A-108 METSAT AMSU-A1 Power Control/Monitor - PCB Only - Mesh Only

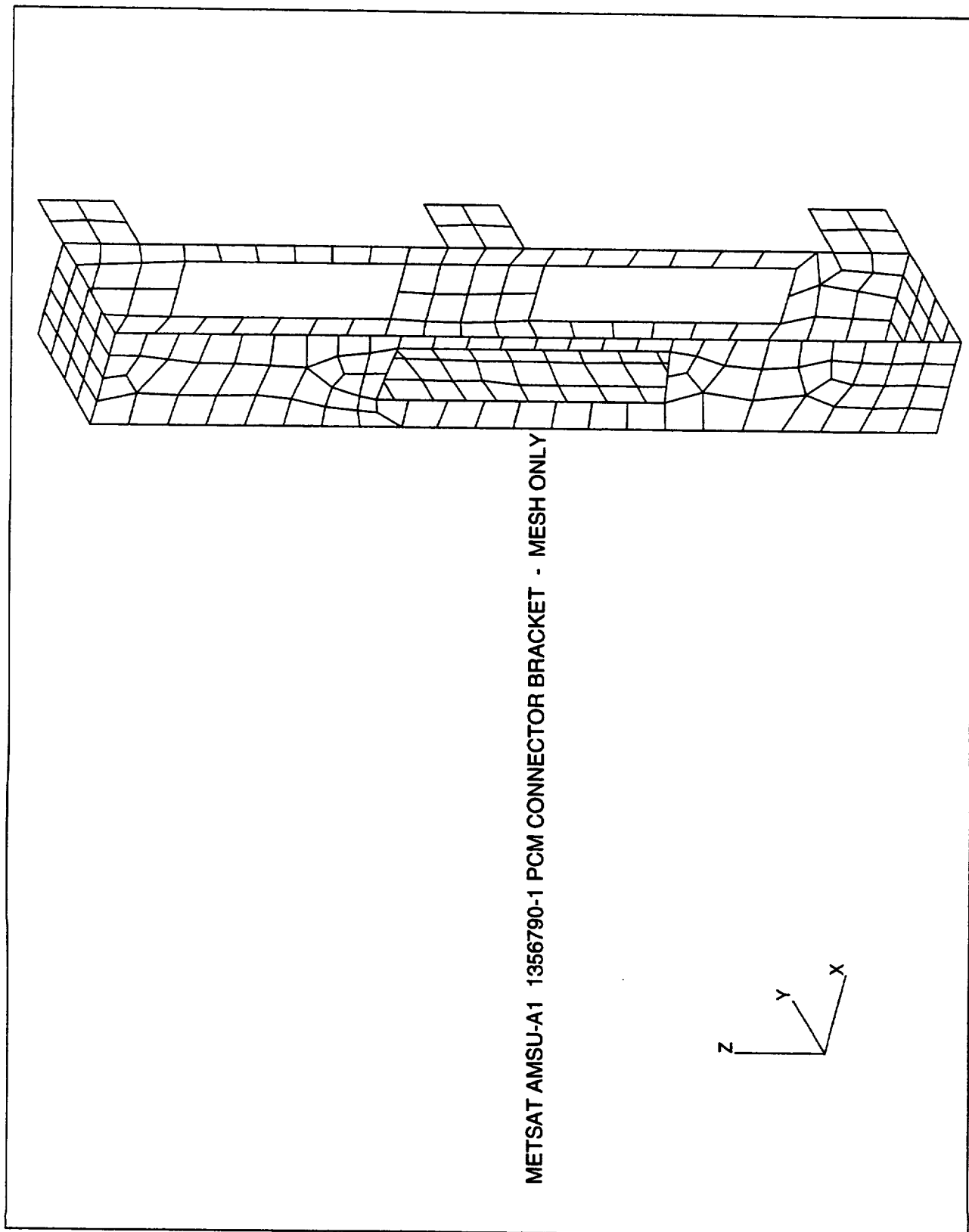


Figure A-109 METSAT AMSU-A1 1356790-1 PCM Connector Bracket - Mesh Only

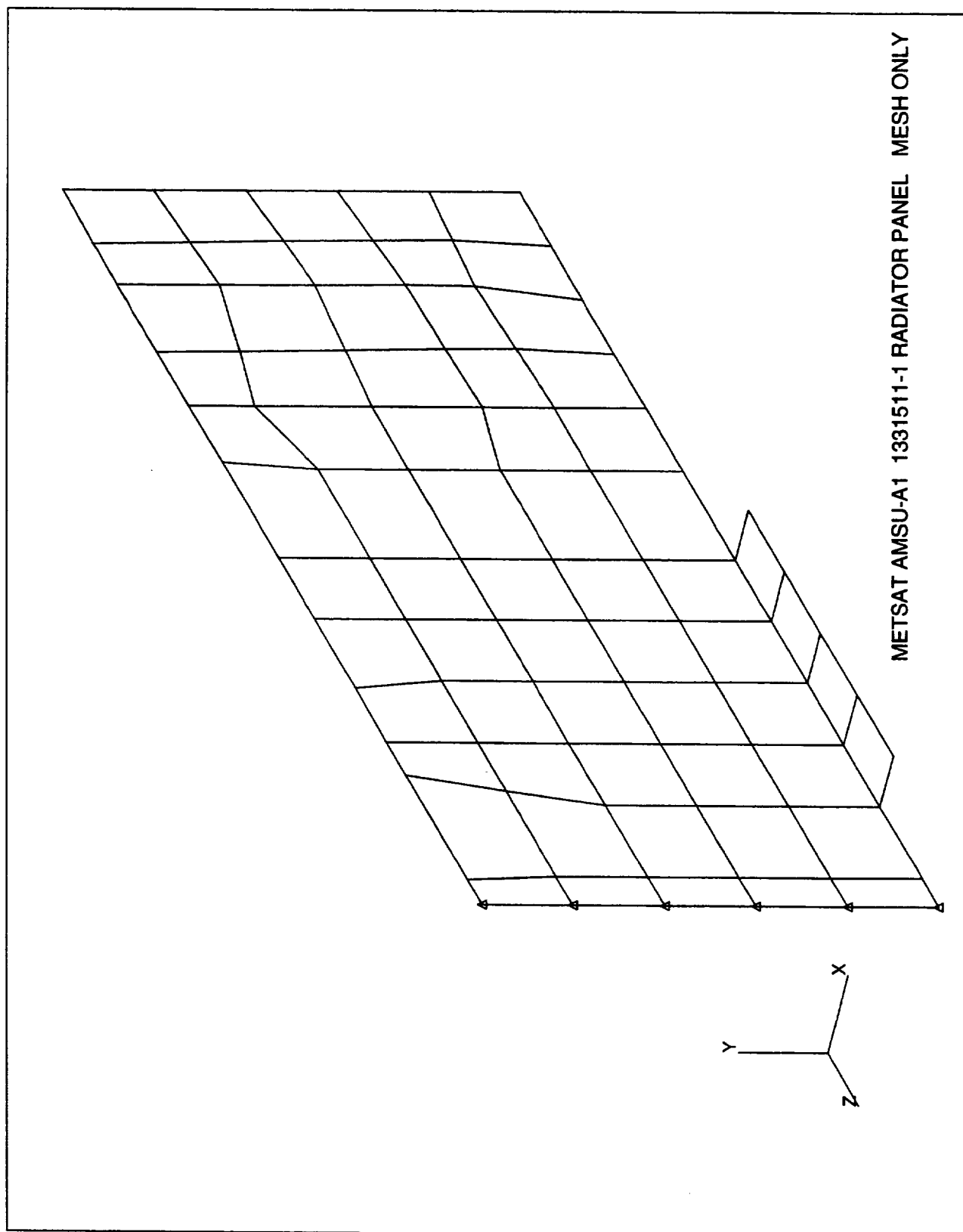


Figure A-110 METSAT AMSU-A1 1331511-1 Radiator Panel Mesh Only

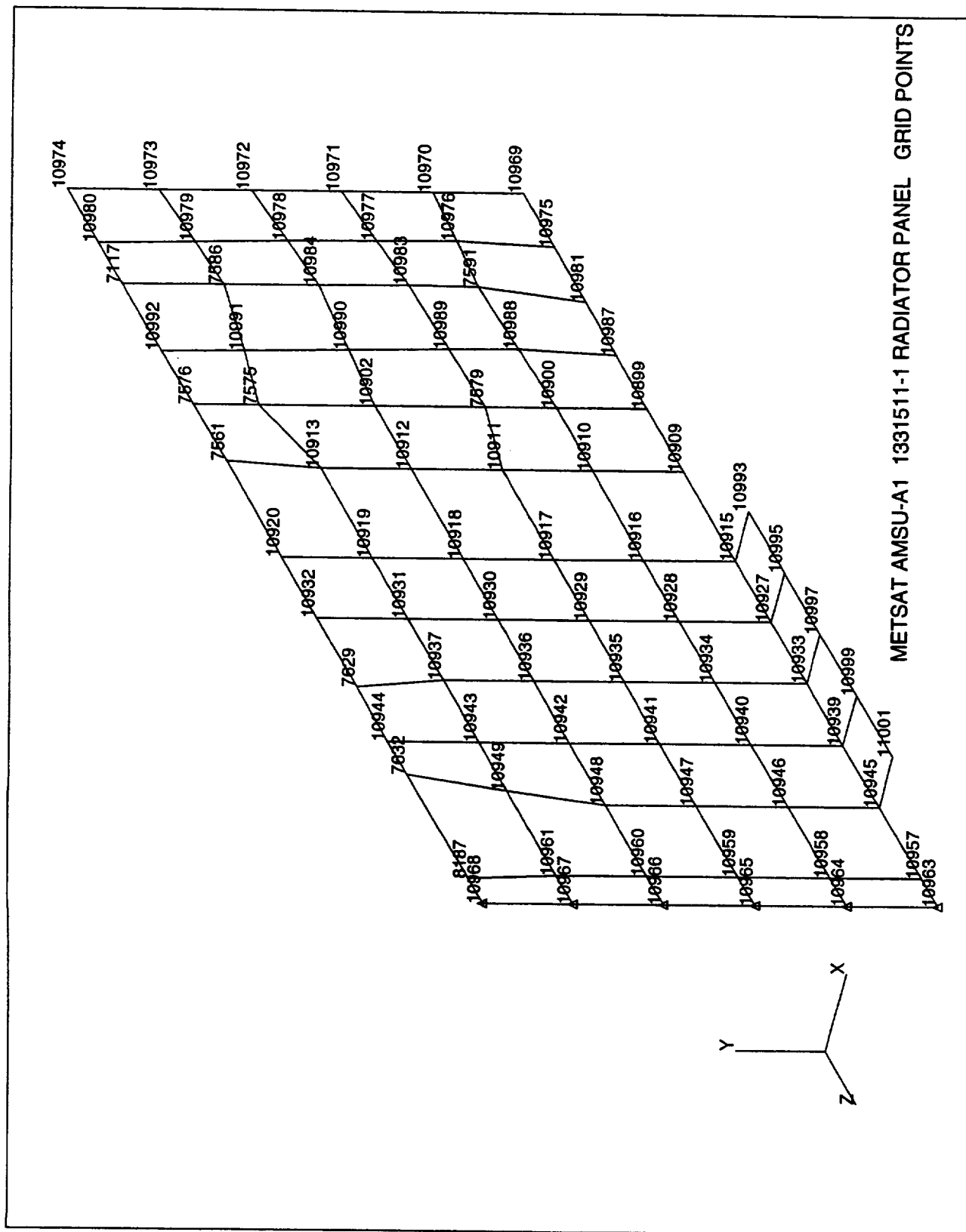


Figure A-111 METSAT AMSU-A1 1331511-1 Radiator Panel Grid Points

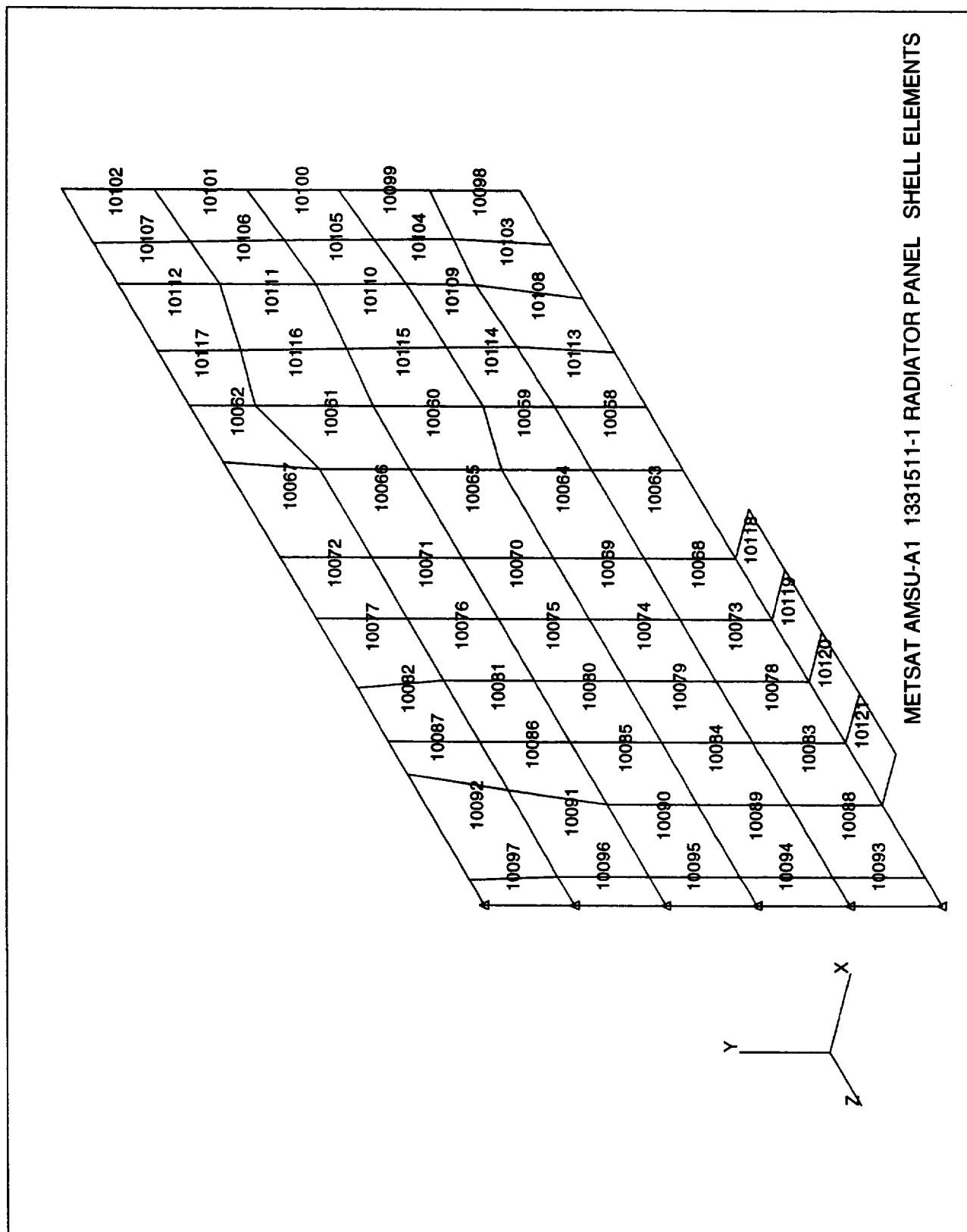


Figure A-112 METSAT AMSU-A1 1331511-1 Radiator Panel Shell Elements

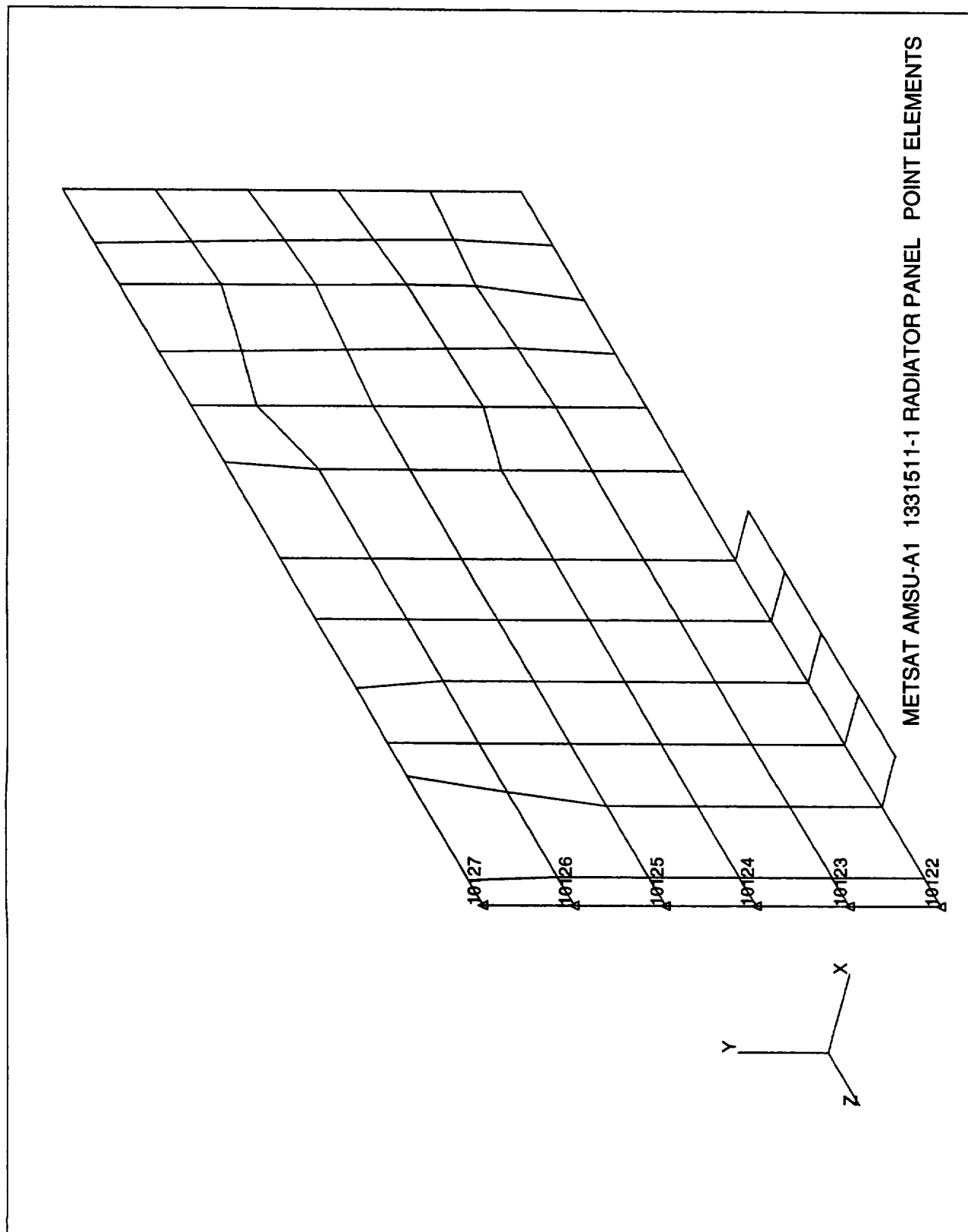


Figure A-113 METSAT AMSU-A1 1331511-1 Radiator Panel Point Elements

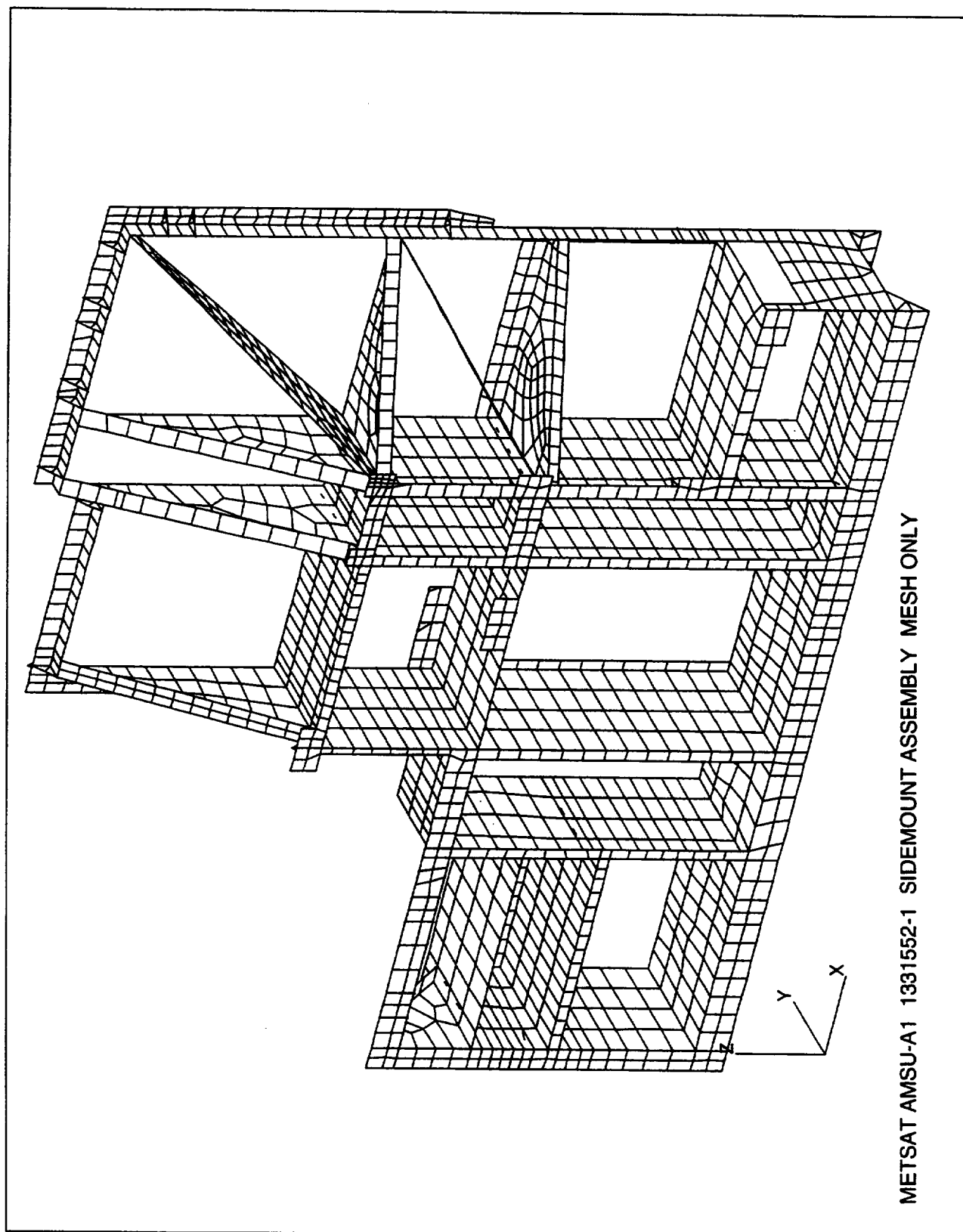


Figure A-114 METSAT AMSU-A1 1331552-1 Sidemount Assembly Mesh Only

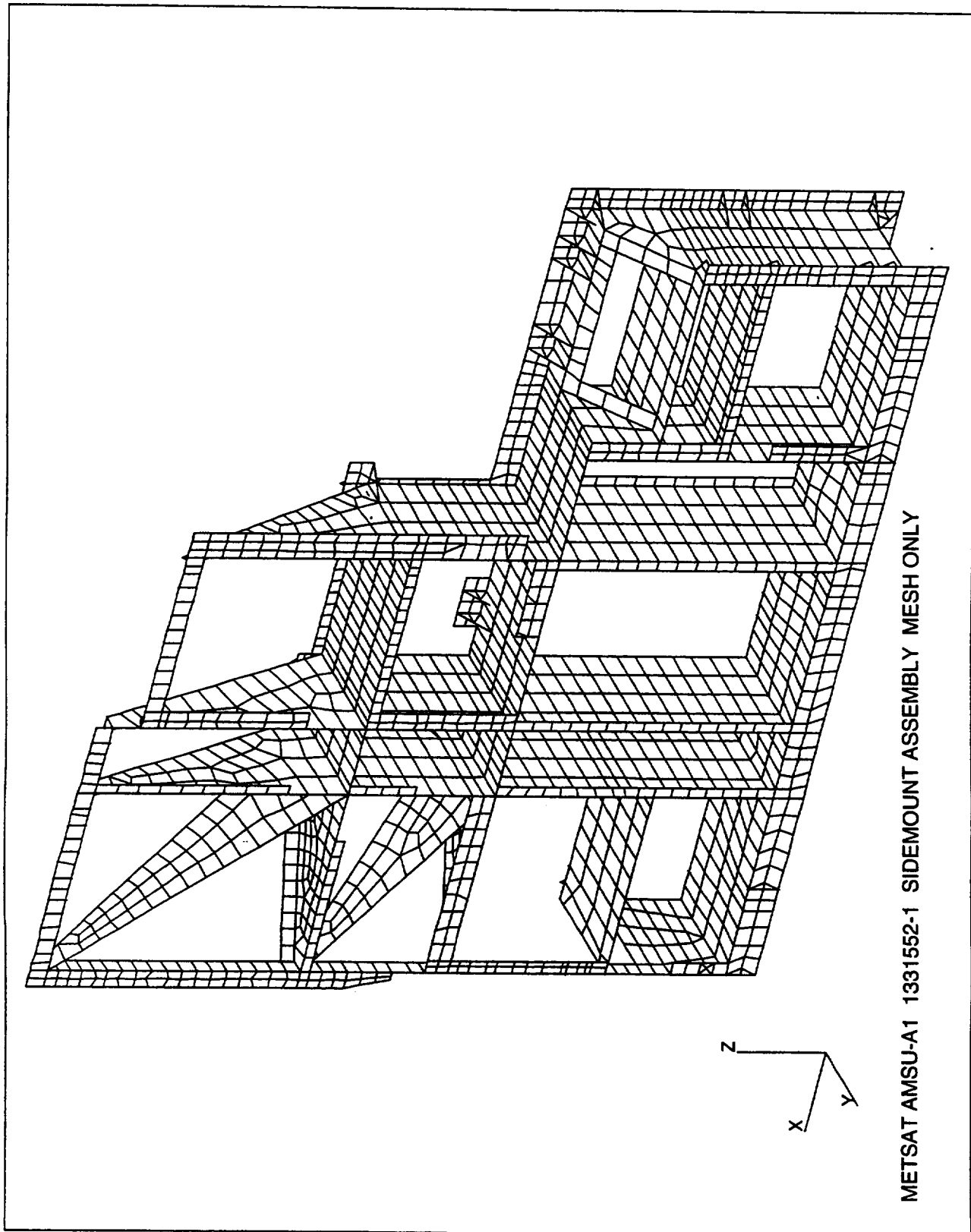


Figure A-115 METSAT AMSU-A1 1331552-1 Sidemount Assembly Mesh Only

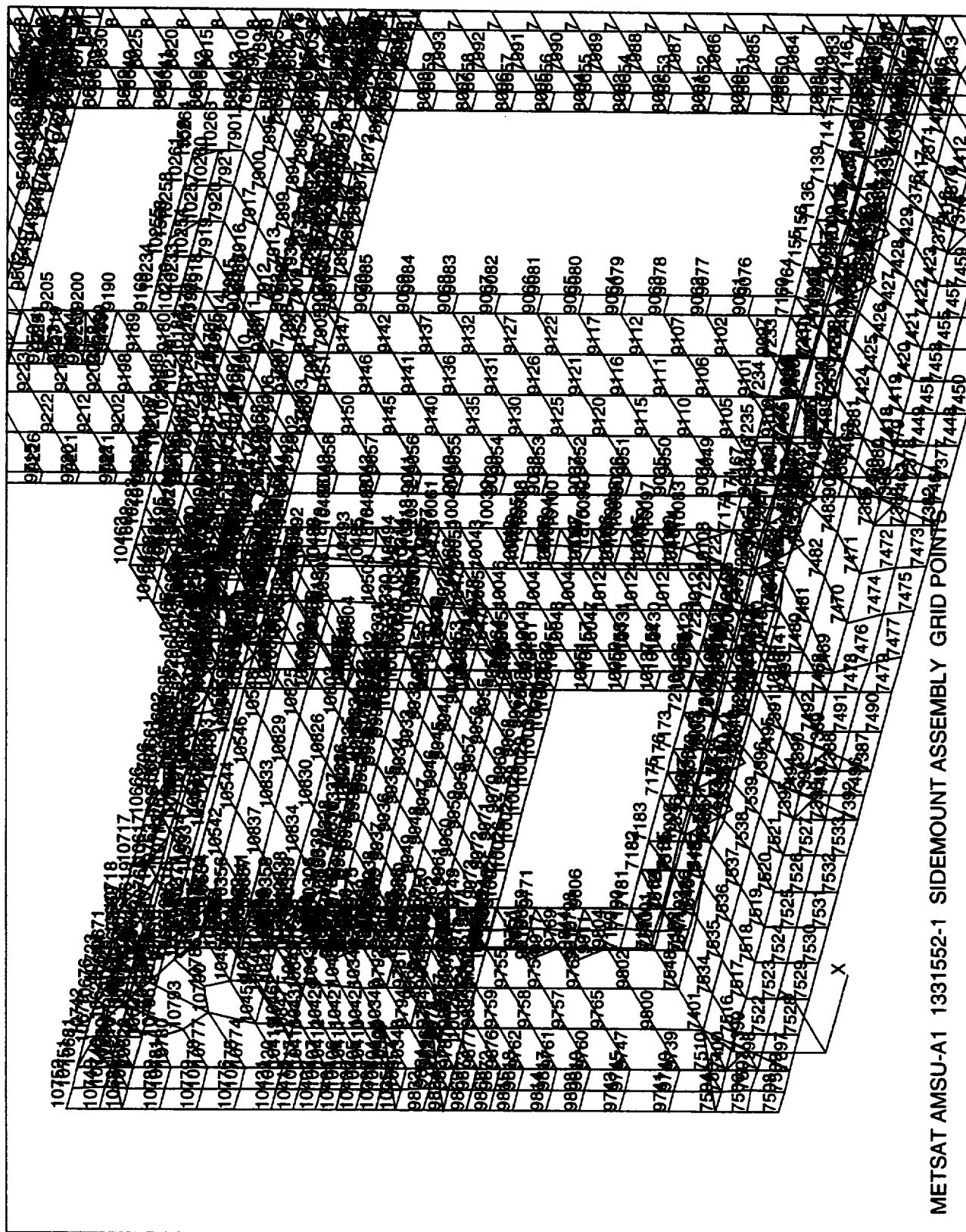


Figure A-116 METSAT AMSU-A1 1331552-1 Sidemount Assembly Grid Points

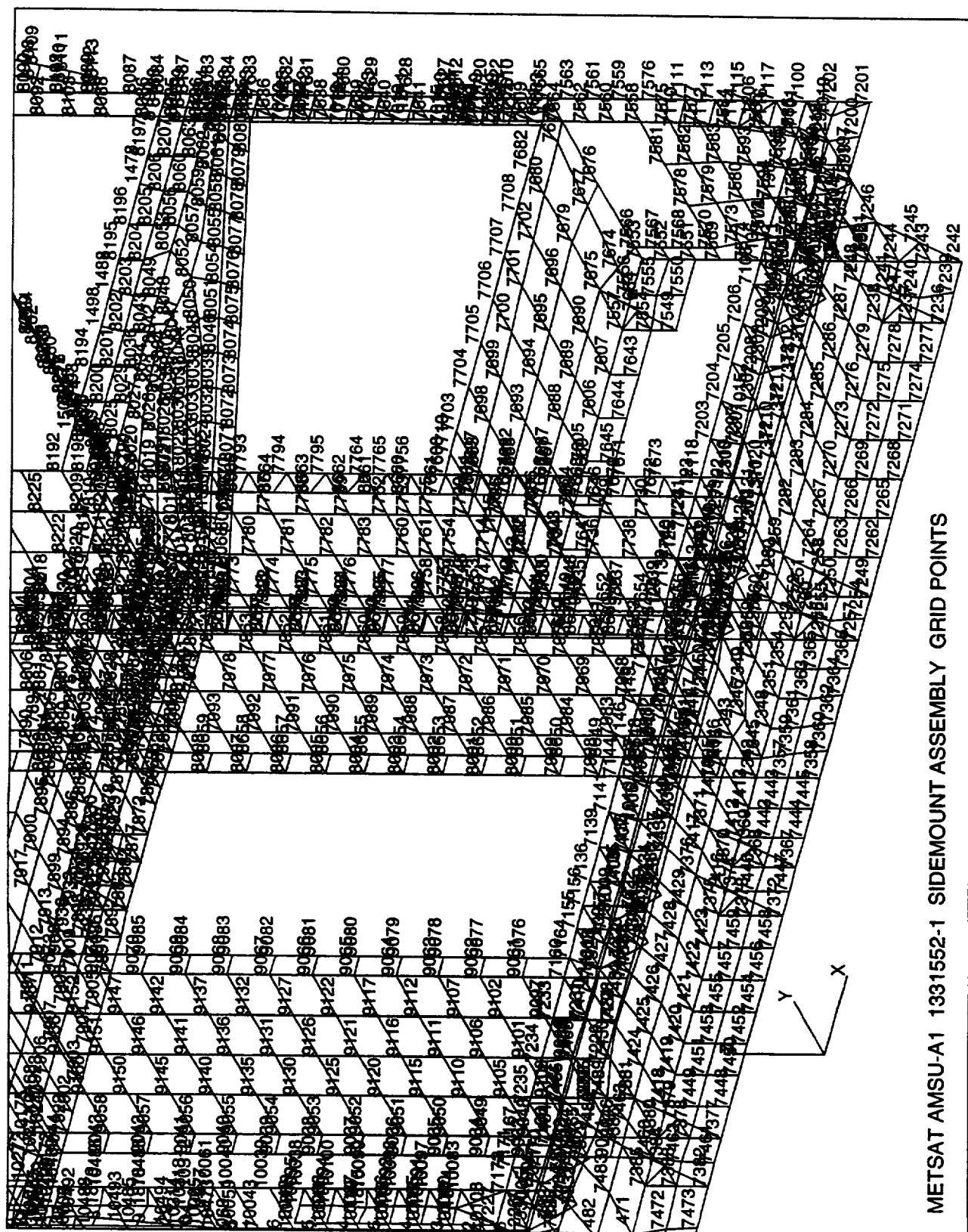


Figure A-117 METSAT AMSU-A1 1331552-1 Sidemount Assembly Grid Points

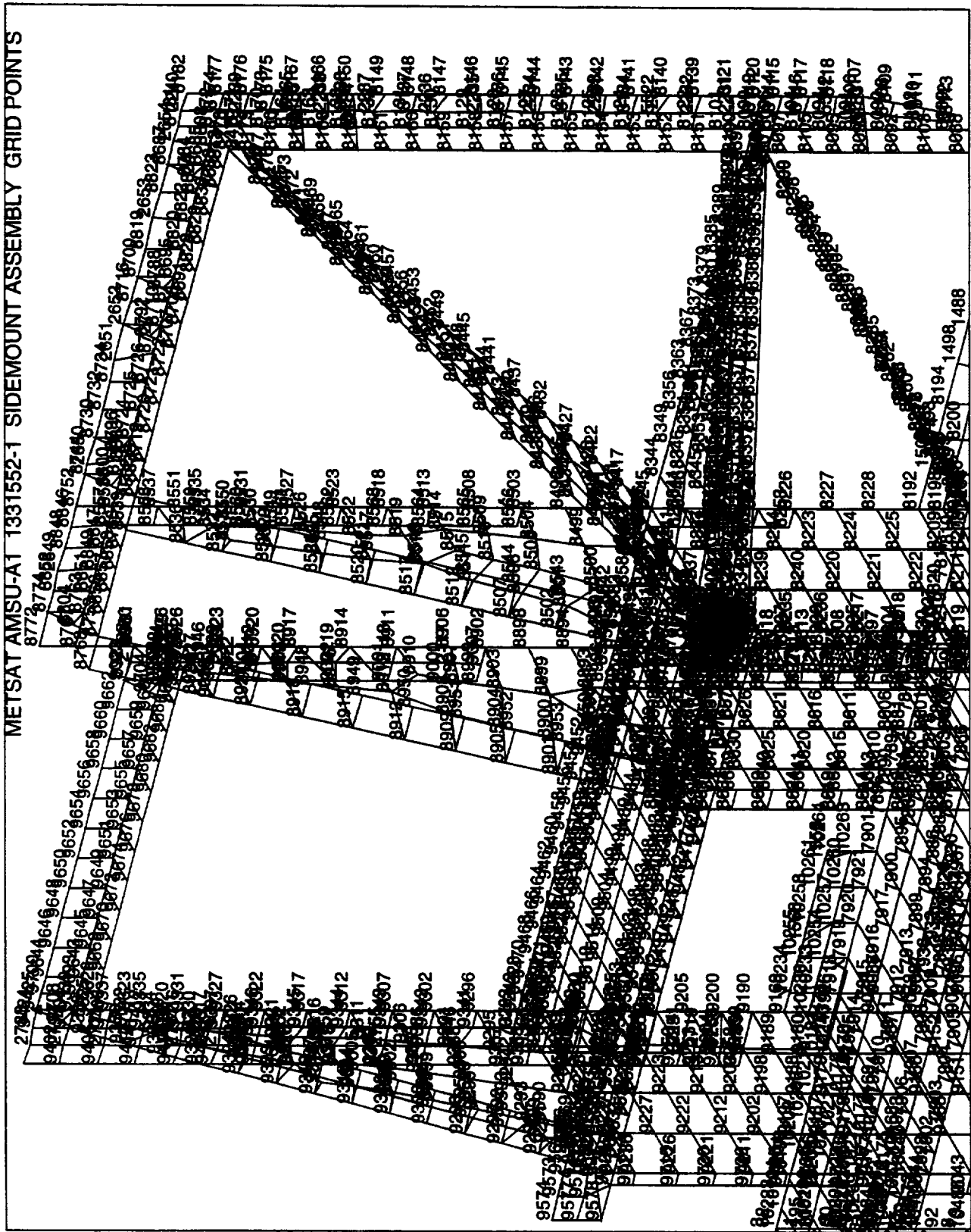


Figure A-118 METSAT AMSU-A1 1331552-1 Sidemount Assembly Grid Points

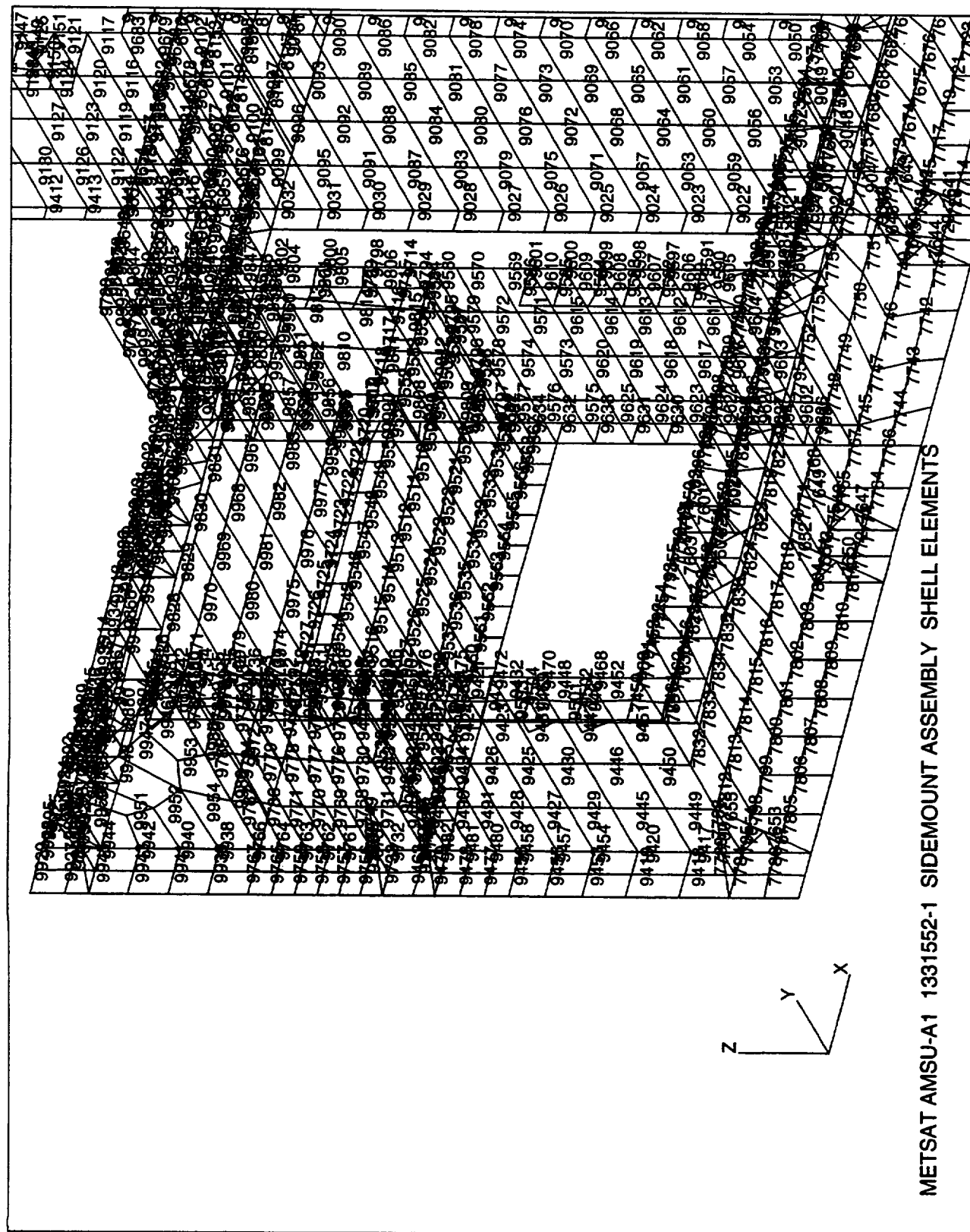


Figure A-119 METSAT AMSU-A1 1331552-1 Sidemount Assembly Shell Elements

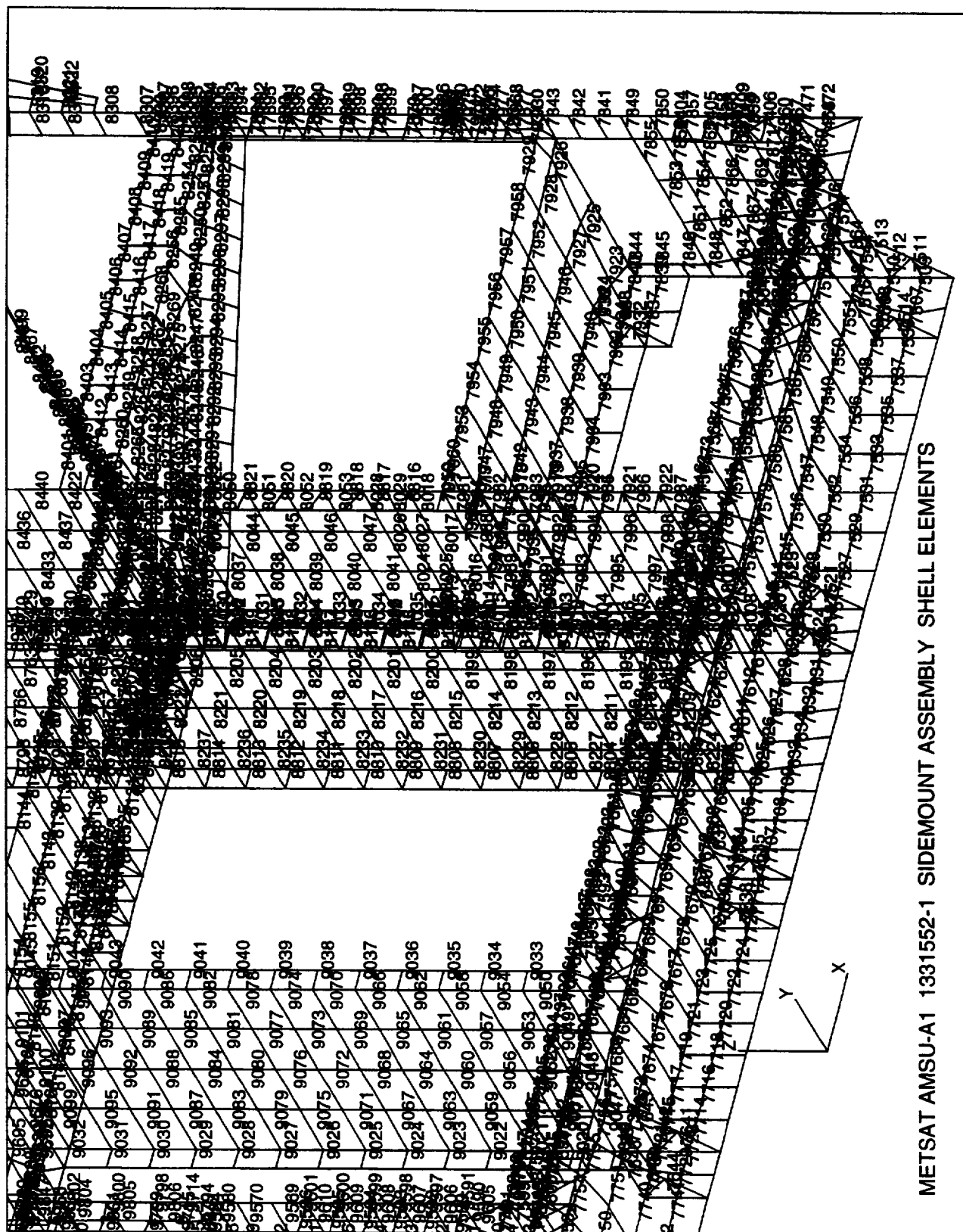


Figure A-120 METSAT AMSU-A1 1331552-1 Sidemount Assembly Shell Elements

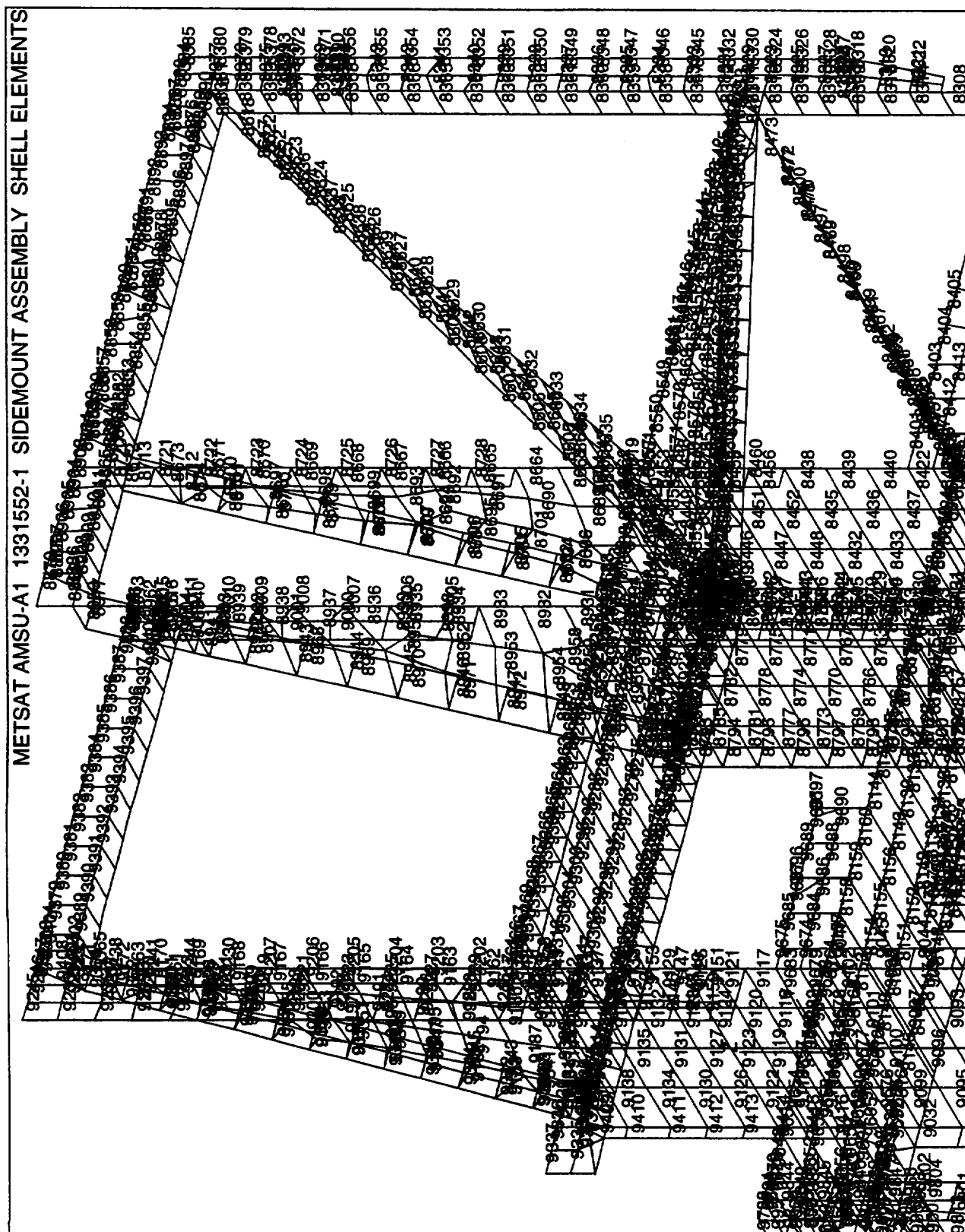


Figure A-121 METSAT AMSU-A1 1331552-1 Sidemount Assembly Shell Elements

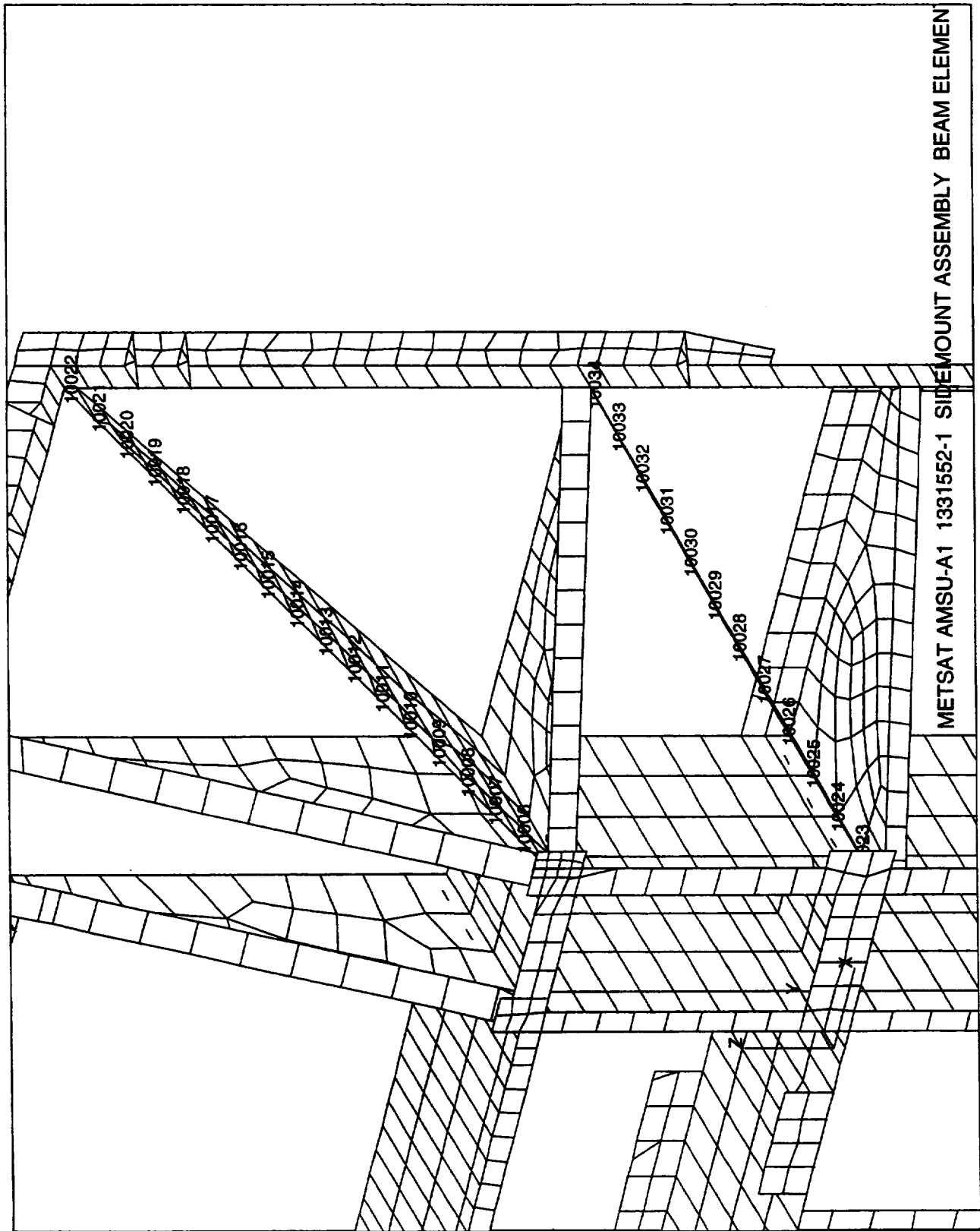


Figure A-122 METSAT AMSU-A1 1331552-1 Sidemount Assembly Beam Elements

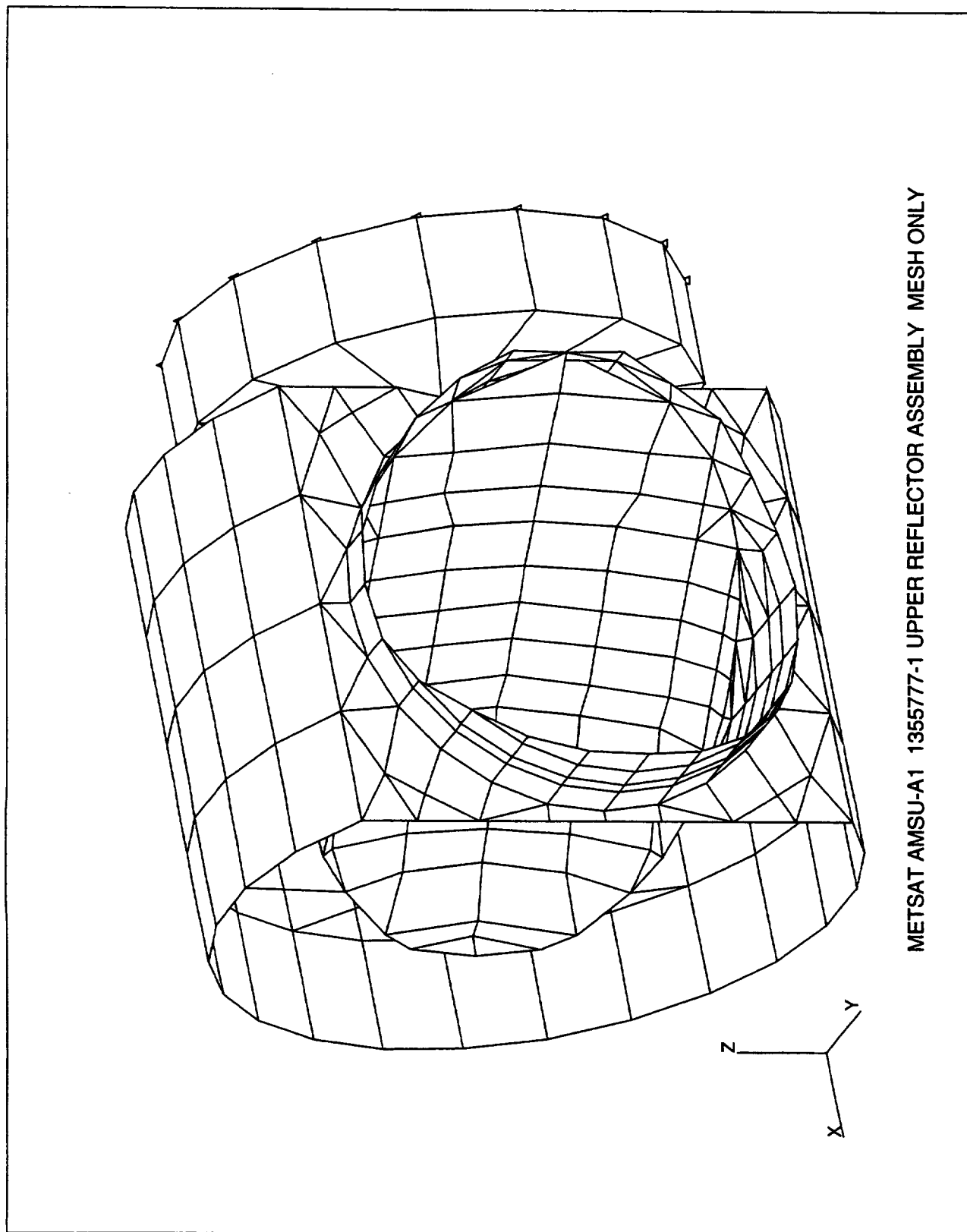


Figure A-123 METSAT AMSU-A1 1355777-1 Upper Reflector Assembly Mesh Only

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APPENDIX B

NASTRAN FINITE ELEMENT MODEL

MATHEMATICAL VALIDITY CHECK

To demonstrate the mathematical soundness of the NASTRAN model, the model is subjected to the GSFC 422-11-12-01 Paragraph 11.1.4.i Deliverable Model Validity Check, where a rigid-body or stiffness-equilibrium check is performed. Using NASTRAN Solution 3, a DIAG 64 ALTER 126 DMAP is run. The NASTRAN Executive Control Data Deck consists of:

```

ID AMSU1,RANDOM
TIME 60
SOL 3
$
DIAG 64
$
COMPILE SOL3,SOUIN=MSCSOU
ALTER 126
VECPLOT, ,BGPDT,EQEXIN,CSTM,,,/RBGLOBAL/GRDPNT=0//4 $
VEC USET/V1/'G'/'F'/'COMP' $
PARTN RBGLOBAL,V1/RBFF,,,/0 $
TRNSP RBFF/RBFFT $
MPYAD KFF,RBFFT,/KFFR/ $
MATGPR GPL,USET,SIL,KFFR/'F'///1.E-2 $
DIAGONAL KFF/KFFD/OPT='SQUARE'/POWER=-1. $
MPYAD KFFD,KFFR,/KFFRN/ $
MATGPR GPL,USET,SIL,KFFRN/'F'///SMALL=1.E-5 $
ENDALTER
CEND

```

A NASTRAN correspondence on the rigid-body check describes the requirements of the test.

"The basic function of this check is to multiply through a cross product the free stiffness matrix by the model rigid body matrix. The matrix which results from this multiplication can be thought of as the internal forces which must be applied to the structure to overcome any model internal constraint to achieve the desired rigid body motion. This matrix is titled the KFFR matrix. The smaller the magnitude of the numbers in the matrix, the less internal constraint present in the model. The DMAP will print any values larger than 1.0E-2. In an attempt to evaluate the effect of any internal constraint, the KFFR matrix is divided by the diagonal stiffness term of each respective row. The resulting matrix is considered "normalized" and is titled the KFFRN matrix. A satisfactory KFFRN matrix will generally have terms less than 1.0E-5."

Thus terms of the KFFRN matrix need be less than 1.0E-5.

The NASTRAN METSAT AMSU-A1 finite element model has been checked to conform to GSFC 422-11-12-01 Paragraph 11.1.4.i requirements. All terms of the KFFRN matrix are less than 1.0E-5. The NASTRAN rigid-body check solution follows.

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[illegible]

N A S T R A N S Y S T E M P A R A M E T E R E C H O F E B R U A R Y 2 7 , 1 9 9 6 M S C / N A S T R A N 8 / 2 4 / 9 4 P A G E 1

NASTRAN BUFFSIZE=8065,HICORE=2000000,REAL=0

FEBRUARY 27, 1996 MSC/NASTRAN 8/24/94 PAGE 2

N A S T R A N E X E C U T I V E C O N T R O L D E C K E C H O

```

ID AMSUAL, RANDOM
TIME 16
SOL 3
$
DIAG 64
$
COMPILE SOL3, SOUIN-MSCSOU
ALTER 126
VECPLOT, , BGPDT, EDEXIN, CSTM, , , , /RBGLOBAL/GRDPNT=0//4 $
VEC USET/V1/'G'/'F'/'COMP' $
PARTN RBGLOBAL, V1, /RBFF, , , /0 $
TRNSP RBFF/RBFFT $
MPYAD KFF, RBFFT, /KFFR/ $
MATGR GPL, USET, SIL, KFFR/'F'///1.E-2 $
DIAGONAL KFF/KFFD/OPT='SQUARE'/POWER=-1. $
MPYAD KFFD, KFFR, /KFFRN/ $
MATGR GPL, USET, SIL, KFFRN/'F'///SMALL=1.E-5 $
ENDALTER
$
$
CEND

```

N A S T R A N S O U R C E P R O G R A M C O M P I L A T I O N

```

DMAP-DMAP INSTRUCTION
OLD NO. NEW NO. 1 SUBMAP SOL3 GEOM1,EPT,MPT,EDT,DIT,DYNAMICS,
1 1 1 SUBMAP SOL3 GEOM1,EPT,MPT,EDT,DIT,DYNAMICS,
      GEOM2,GEOM3,GEOM4,MATPOOL,AXIC,
      PVT,DMI,DMINDX,DTI,DTINDX,
      CASECC,PCDB,XCDB,XCDB,POSTCDB,FORCE// $
      NO. 3 NORMAL MODES ANALYSIS / 25/MAY/94 $
      20-MAY-1994 ++++++
$BEGIN
$ ***** GEN
NOOP() $ //S,N,CARDNO/0 $
SETVAL //S,N,NOKGX/1 $
SETVAL //S,N,NOMGX/1 $
SETVAL //S,N,NOMGX/1 $
PARAML CASECC//DTI//1/35//S,N,SPCREQ $
PARAML CASECC//DTI//1/170//S,N,ESE $
PARAML CASECC//DTI//1/167//S,N,GPFO $
PARAML XCDDB//PRES//S,N,NOXCDDB $
PARAML PCDB//PRES//S,N,JUMPPLOT $
PARAM //NOT//S,N,SPCREQ/V,N,SPCREQ/V,Y,NOGPF=1 $
PARAM //NOT//S,N,GPFO/GPFO $
PARAM //AND//S,N,NOSPC/GPFO/SPCREQ $
PARAM //AND//S,N,GPFO/ESE/GPFO $
PARAM //NOP//S,Y,ASING=0/V,Y,CURVLOT=-1/V,Y,CURV=-1 $
SETVAL //S,N,PLTFLG/1/S,N,FILE/0 $
PURGE QG/NOSPC/PLTPAR/JUMPPLOT/GPSETS/JUMPPLOT/ELSETS/JUMPPLOT $
EQUIV GEOM1,GEOM1Q/NEWSEQ $
COND NOSEQ,NEWSEQ $
SEQ GEOM1,GEOM2,GEOM4,EPT/GEOM1Q,MATPAR/V,Y,SEQOUT=0/
V,Y,NEWSEQ=3//V,Y,SUPER=0/V,Y,FACTOR=10000/
V,Y,MECX=0/V,Y,START=0 $
NOSEQ $
GEOM1Q,GEOM2,,,/GPL,EQEXIN,GPDT,CSTM,BGPD,T,SIL,/
S,N,LUSET/0/S,N,NOGPD $
LNOGP,NOGPD $
GEOM2,EQEXIN,EPT/ECT $
NOELT,PROUT $
ELTPRT ECT,,,//V,Y,PROUT=-1 $
LABEL NOELT $
NOOP() $ P1,JUMPPLOT $
PLTHBDY GEOM2,ECT,EPT,SIL,EQEXIN,BGPD,T,CSTM/
PECT,PSIL,PEQIN,BGPD,T/S,N,NHBDY/V,Y,MESH='NO' $
EQEXIN,PEQIN/NHBDY/ECT,PECT/NHBDY/BGPD,T,BGPD,T/NHBDY/
SIL,PSIL/NHBDY $
PCDB,PEQIN,PECT/PLTSETX,PLTPAR,GPSETS,ELSETS/S,N,NSIL/
S,N,JUMPPLOT $
NOOP() $ PLTSETX// $
PRMSG P1,JUMPPLOT $
COND PLTPAR,GPSETS,ELSETS,CASECC,BGPD,T,PEQIN,PSIL,ECT,,/PLOTX1/
PLOT

```


N A S T R A N S O U R C E P R O G R A M C O M P I L A T I O N

```

DMAP-DMAP INSTRUCTION
OLD NO. NEW NO. ( *I* = INSERTED, *D* = DELETED )
84 84 COND LBL11,NOGENL $
85 85 SMA3 GE1,/KGGZ/LUSET/NOGENL/-1 $
86 86 ADJ KGGY,KGGZ/KGG/V,Y,CK3=(1.0,0.0) $
87 87 LABEL LBL11 $
88 88 EQUIV BGGX,BGG/NOB2GG $
89 89 COND LBLNOBX,NOB2GG $
90 90 ADJ BGGX,B2GG/BGG/V,Y,CB1=(1.0,0.0)/V,Y,CB2=(1.0,0.0) $
91 91 LABEL LBLNOBX $
92 92 S ++++++ KCON 1-APR-1994 ++++++
92 92 SETVAL //S,N,NSKIP/0 $
93 93 JUMP LOOPTOP $
94 94 LABEL LOOPTOP $
95 95 G24 LOOPTOP $

CASECC,GEOM4,EQEXIN,SIL,GPD,T,BGPD,T,CSTM,..//
RG,YSB,USETR,ASET/
LUSET/S,N,MPCF1/S,N,MPCF2/S,N,SINGLE/S,N,OMIT/S,N,REACT/
S,N,NSKIP/S,N,REPEAT/S,N,NOSET/S,N,NOL/S,N,NOA/V,Y,SUBID $
GM/MPCF1 $
LBL2,MPCF2 $
USETR,RG/GM $
LBL2 $
KGG,KNN/MPCF1 $
LBL2K,MPCF2 $
USETR,GM,KGG,..//KNN,.. $
LBL2K $
KNN,USETR,SIL,GPL,YSB,GEOM4,EQEXIN/USETR,YS/
S,N,SINGLE/V,Y,AUTOSPC='NO'/V,Y,PRGPST='YES'/V,Y,SPCGEN=0/
V,Y,EPZERO=1.E-8/0/S,N,SING/V,Y,EPRT=1.E-8/
S,N,NOSET/S,N,NGERR $
USETR//USETR/////////'A'/S,N,NOASET/
'B'/S,N,NOBSET/
'C'/S,N,NOCSET/
'G'/S,N,NOGSET/
'L'/S,N,NOLSET/
'O'/S,N,OMIT/
'S'/S,N,SINGLE/
'T'/S,N,NOTSET/
'Q'/S,N,NOQSET/
'R'/S,N,REACT/
'V'/S,N,NOVSET $

//EQ'/S,N,NOA/NOGSET/NOASET $
//AND'/S,N,NOSET/NOA/REACT $
NOPRUST,USETRPT $
USETR,EQEXIN//USETR//V,Y,USETRPT=-1/V,Y,USETRSEL $
NOPRUST $
RFERR,NGERR $
CASECC//DTI'/-1/150//S,N,DYNRED $
//NOT'/S,N,NODYNRED/DYNRED $
DNOQSET,NOQSET $
//S,N,ERRNO/4401 $
ERMSG,OMIT $

PARAM 105 PARAML 105
PARAM 106 PARAM 106
COND 107 COND 107
TABPRT 108 TABPRT 108
LABEL 109 LABEL 109
COND 110 COND 110
COND 111 COND 111
PARAM 112 PARAM 112
PARAM 113 PARAM 113
COND 114 COND 114
SETVAL 115 SETVAL 115
COND 116 COND 116

```


SUBDMAP - SOL3

NASTRAN SOURCE PROGRAM COMPILATION

DMAP-DMAP INSTRUCTION
 OLD NO. NEW NO. (*I* = INSERTED, *D* = DELETED)

117 JUMP DNOISET \$
 118 LABEL DNOQSET \$
 119 SETVAL //S,N,ERRNO/4402 \$
 120 COND ERMSG,NOLSET \$
 121 SETVAL //S,N,ERRNO/4419 \$
 122 COND ERMSG,DYNRED \$
 123 LABEL DNOISET \$
 124 EQUIV KNN,KFF/SINGLE \$
 125 COND LBL3,SINGLE \$
 126 SCE1 USET,KNN,,,/KFF,KFS,KSS,,, \$
 I VECPLOT, ,BGDPT,EQEXIN,CSTM,,,/RBGLOBAL/GRDPNT=0//4 \$

*** USER WARNING MESSAGE 42, POSSIBLE ERROR IN DMAP INSTRUCTION VECPLOT INSTRUCTION NO. 127

PARAMETER NAMED GRDPNT ALREADY HAD VALUE ASSIGNED PREVIOUSLY

I 128 VEC USET/V1/'G'/'F'/'COMP' \$
 I 129 PARTN RBGLOBAL,V1,/RBFF,,,/0 \$
 I 130 TRNSP RBFF/RBFFT \$
 I 131 MPYAD KFF,RBFFT,/KFFR/ \$
 I 132 MATGPR GPL,USET,SIL,KFFR/'F'/'1.E-2 \$
 I 133 DIAGONAL KFF/KFFD/OPT='SQUARE'/POWER=-1. \$
 I 134 MPYAD KFFD,KFFR,/KFFRN/ \$
 I 135 MATGPR GPL,USET,SIL,KFFRN/'F'/'SMALL=1.E-5 \$
 127 LABEL LBL3 \$
 128 EQUIV KFF,KTT/OMIT \$
 129 COND LBL5,OMIT \$
 130 UPARTN USET,KFF/KOO, ,KOA,KAAB/'F'/'O'/'A' \$
 131 EQUIV KOA,KOT/NOQSET /KAAB,KTT1/NOQSET \$
 132 COND LNOTSET,NOQSET \$
 133 COND LNOTSET,NOTSET \$
 134 VEC USET/VAQT/'A'/'Q'/'T' \$
 135 PARTN KOA,VAQT,,,KOT,1 \$
 136 UPARTN USET,KAAB,,,KTT1/'A'/'Q'/'T' \$
 137 LABEL LNOTSET \$
 138 PARAML KOA/'NULL'/'S,N,NP \$
 139 EQUIV KTT1,KTT/NP \$
 140 COND LBL5,NP \$
 141 DECOMP KOA/LOO,1/0/S,N,MIND/S,N,DETER/S,N,POW/
 142 S,N,SING/S,N,NBRCH/S,N,MAXRAT \$
 143 NULLCO,SING \$
 144 COND //GT/'S,N,NP/NBRCH/0 \$
 145 PARAM PRTECHO,NP \$
 146 COND //LE/'V,N,N,MAXRAT/V,Y,MAXRATIO=1.E7'/'S,N,NP \$
 147 LABEL GOON,NP \$
 148 PRTECHO \$
 149 DIAGONAL KOO/KDIAG \$
 150 ADD KDIAG,LDIAG/MECH'/'2 \$
 151 PRTPARM //4420/'DMAP' \$
 152 MATGPR GPL,USET,SIL,MECH/'H'/'O'/'V,Y,MAXRATIO/1.0E-20 \$

```

N A S T R A N   S O U R C E   P R O G R A M   C O M P I L A T I O N
DMAP-DMAP INSTRUCTION ( *I* = INSERTED, *D* = DELETED )
OLD NO. NEW NO.
153 162 PARAM //NOP'/S,Y,BAILOUT=-1 $
154 163 COND GOON,BAILOUT $
155 164 JUMP RFERR $
156 165 LABEL NULLCO $
157 166 MATMOD KOO,,,,/NULLO,/12/S,N,NP $
158 167 COND GOON,NP $
159 168 MATGPR GPL,USET,SIL,NULLO//H//O' $
160 169 JUMP RFERR $
161 170 LABEL GOON $
162 171 F3S LOO,,KOT/GO/1/-1 $
163 172 MPYAD KOT,GO,KTT1/KTT/1////6 $
164 173 LABEL LBL5 $
165 174 EQUIV KTT,KAA/NOOSET $
166 175 EQUIV KTT,KLL/REACT $
167 176 PURGE DM/REACT $
168 177 COND LBL6,NOLSET $
169 178 COND LBL6X,REACT $
170 179 UPARTN USET,KTT/KLL,,KLR,KRR/'T'/'L'/'R' $
171 180 JUMP LBL6Y $
172 181 LABEL LBL6X $
173 182 COND LBL6,MODACC $
174 183 LABEL LBL6Y $
175 184 DECOMP KLL/LLL,/1/0/S,N,MIND/S,N,DETER/S,N,POW/S,N,SING/
S,N,NBRCH/S,N,MAXRAT/48 $
176 185 COND NULLL,SING $
177 186 PARAM ///NE'/S,N,NP/SING/1 $
178 187 COND NOLLIST,NP $
179 188 C'ABPT USET,EQEXIN,///'USET'/0/256 $
180 189 JUMP PRTECHL $
181 190 LABEL NOLLIST $
182 191 PARAM ///GT'/S,N,NP/NBRCH/0 $
183 192 COND PRTECHL,NP $
184 193 PARAMR ///LE'//V,N,MAXRAT/V,Y,MAXRATIO///S,N,NP $
185 194 COND GOONL,NP $
186 195 LABEL PRTECHL $
187 196 DIAGONAL KLL/KDIAGL $
188 197 DIAGONAL LLL/LDIAGL $
189 198 ADD KDIAGL,LDIAGL/MECHL///2 $
190 199 PRTPARM //4420/'DMAP' $
191 200 MATGPR GPL,USET,SIL,MECHL//H//L//V,Y,MAXRATIO /1.0E-20 $
192 201 COND GOONL,BAILOUT $
193 202 JUMP RFERR $
194 203 LABEL NULLL $
195 204 MATMOD KLL,,,,/NULLL,/12/S,N,NP $
196 205 COND RFERR,NP $
197 206 MATGPR GPL,USET,SIL,NULLL//H//L' $
198 207 JUMP RFERR $
199 208 LABEL GOONL $
200 209 COND LBL6,REACT $
201 210 REMG3 LLL,,KLR,KRR/DM $
```

SUBDMAP - SOL3

NASTRAN SOURCE PROGRAM COMPI LATION

```

DMAP-DMAP INSTRUCTION
OLD NO. NEW NO. ( *I* = INSERTED, *D* = DELETED )
202 211 LABEL LBL6 $
203 212 $ ++++++ MCON,DP 1-APR-1986 ++++++
203 212 EQUIV MGN,MN/MPCF1 $
204 213 COND LBL2M,MPCF2 $
205 214 MCE2 USET,GM,MGN,,,/MNN,,, $
206 215 LABEL LBL2M $
207 216 MN,MFF/SINGLE $
208 217 COND LBL3M,SINGLE $
209 218 SCE1 USET,MNN,,,/MFF,,,, $
210 219 LABEL LBL3M $
211 220 MFF,MTT/OMIT $
212 221 COND LBL4M,OMIT $
213 222 UPARTN USET,MFF/MOO,,MOA,MAA1/'F'/'O'/'A' $
214 223 EQUIV MOA,MOT1/NOQSET/MAA1,MTT1/NOQSET $
215 224 COND MIKE1,NOQSET
216 225 EQUIV MAA1,MQO1/NOTSET/MOA,MQO1/NOTSET $
217 226 SETVAL //S,N,QNOTNULL/0 $
218 227 COND MNOTSET,NOTSET $
219 228 UPARTN USET,MAA1/MQO1,,MOT1,MTT1/'A'/'Q'/'T' $
220 229 PARTN MOA,VAQT,/MQO1,,MOT1,/1 $
221 230 PARAML MOT1/'TRAILER'/5/S,N,QNOTNULL//S,N,NM $
222 231 LABEL MNOTSET $
223 232 PARAM //ADD'/S,N,NP/QNOTNULL/0 $
224 233 PARAML MQO1/'TRAILER'/5/S,N,QNOTNULL//S,N,NM $
225 234 PARAM //ADD'/S,N,NP/QNOTNULL $
226 235 PARAML MQO1/'TRAILER'/5/S,N,QNOTNULL//S,N,NM $
227 236 PARAM //ADD'/S,N,QNOTNULL/QNOTNULL/NP $
228 237 PARAM //CT'/S,N,QNOTNULL/QNOTNULL/0 $
229 238 SETVAL //S,N,ERRNO/4404 $
230 239 COND RFERR,QNOTNULL $
231 240 LABEL MIKE1 $
232 241 MPYAD MOO,GO,MOT1/MOT $
233 242 MPYAD MOT1,GO,MTT1/MTT2/1 $
234 243 MPYAD GO,MOT,MTT2/MTT1/1///6 $
235 244 LABEL LBL4M $
236 245 COND M8NORSET,REACT $
237 246 EQUIV MTT,MR/NOLSET $
238 247 COND M8NORSET,NOLSET $
239 248 UPARTN USET,MTT/MLL,,MLR,MRR/'T'/'L'/'R' $
240 249 RBMG4 DM,MLL,MLR,MRR/MR $
241 250 LABEL M8NORSET $
242 251 EQUIV MTT,MAA/NOQSET
243 252 $ ++++++ DRED 14-MAR-1991 ++++++ BEGIN
244 253 EQUIV GO,GOA/NOQSET $
245 254 COND LBL5M,NOQSET $
246 255 COND NOGOQ,NODYNRED $
IF ( REACT>-1 ) MESSAGE // DMAP WARNING MESSAGE 9001 (DRED) -'/
, GENERALIZED DYNAMIC REDUCTION'/
, HAS BEEN REQUESTED IN THE PRESENCE OF SUPPORTED (SEE'/
, SUPORT ENTRY) DEGREES OF FREEDOM. IN SOME CASES SOME'/

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++V66

SUBDMAP = SOL3

NASTRAN SOURCE PROGRAM COMPILATION

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DMAP-DMAP INSTRUCTION
OLD NO. NEW NO. ( *I* - INSERTED, *D* - DELETED )
, FLEXIBLE MODES MAY BE DISCARDED OR THOSE IN HIGH FREQUENCY' /
, CLUSTERS MAY BE SKIPPED.' $
PARAM 256 MOO,MV/NP $
EQUIV 257 MIK30,NP $
COND 258 MTT1/MCOMP/NOBSET $
EQUIVX 259 MOT1/MOCOMP/NOBSET $
EQUIVX 260 M8NOBSET,NOBSET $
COND 261 USET/VTBCOMP/'B'/'COMP' $
VEC 262 MTT1,VTBCOMP,/,MCOMP $
PARTN 263 MOT1,VTBCOMP,/,MCOMP,/1 $
PARTN 264 M8NOBSET $
LABEL 265 MOCOMP/MCOMP $
TRNSP 266 USET/VVOCOMP/'V'/'O'/'COMP' $
VEC 267 MOO,MCOMP,MOCOMP,MCOMP,VVOCOMP,/MVV $
MERGE 268 MIK30 $
LABEL 269 KOO,KVV/NP $
EQUIV 270 MIK31,NP $
COND 271 KTT1,KCOMP/NOBSET/KOT,KOCOMP/NOBSET $
EQUIV 272 M8NOBK,NOBSET $
COND 273 KTT1,VTBCOMP,/,KCOMP $
PARTN 274 KOT,VTBCOMP,/,KCOMP,/1 $
PARTN 275 M8NOBK $
LABEL 276 KOCOMP/KCOMP $
TRNSP 277 KOO,KCOMP,KOCOMP,KCOMP,VVOCOMP,/KVV $
MERGE 278 MIK31 $
LABEL 279 V,Y,EPSMAJC-1.E-8/'MODAL'/REACT/NOQSET $
DYCNTRL 280 V,Y,EPSMAJC-1.E-8/'MODAL'/REACT/NOQSET $
COND 281 NOGOQ,NOYSET $
ADD 282 MVV,KVV/AVV/V,N,DETER $
DECCHP 283 AVV/LVV,/1/0/S,N,MIND/S,N,DETER/S,N,POW/S,N,SING/
S,N,NBRCH/S,N,MAXRAT $
COND 284 GNULLV,SING $
PARAM 285 GNULLV,SING $
COND 286 GNULLV,SING $
PARAMR 287 GNULLV,SING $
COND 288 GNULLV,SING $
LABEL 289 GNULLV,SING $
DIAGONAL 290 GNULLV,SING $
DIAGONAL 291 GNULLV,SING $
ADD 292 GNULLV,SING $
MATGPR 293 GNULLV,SING $
COND 294 GNULLV,SING $
JUMP 295 GNULLV,SING $
LABEL 296 GNULLV,SING $
MATMOD 297 GNULLV,SING $
COND 298 GNULLV,SING $
MATGPR 299 GNULLV,SING $
JUMP 300 GNULLV,SING $
LABEL 301 GNULLV,SING $

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SUBDMAP = SOL3

NASTRAN SOURCE PROGRAM COMPI LATION

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DMAP-DMAP INSTRUCTION
OLD NO. NEW NO.
293 302 DYNREDU ( *I* = INSERTED, *D* = DELETED )
294 303 MATGPR LVV,MVV,CASECC,DYNAMICS/PHIVZ,MYV/NOYSET/NOYSET/
295 304 PARAM V,Y,EPSMALU=1,E-10/V,Y,EPSBIG/0/REACT $
296 305 UMERGE GPL,USET,SIL,PHIVZ//H//V//V//V,Y,PRPHIVZ-1.+37 $
297 306 MATGEN //ADD//S,N,NOZSET/NOYSET/0 $
298 307 EQUIV //AND//S,N,NP/REACT/NOZSET $
299 308 COND /NULLAZ/7/NOZSET/NOZSET $
300 309 VEC PHIVZ,GOZ/NP/PHIVZ,PHIOZ/NP/NULLAZ,PHIAZ/NP $
301 310 PARTN MIK45,NP $
302 311 UMERGE USET /VVOC//V//O//COMP' $
303 312 UMERGE PHIVZ,,VVOC/PHIOZ,PHICOMPZ,,/ 1 $
304 313 EQUIV USET,PHICOMPZ/PHITZ//T//B//C' $
305 314 COND PHIOZ,PHIOZ/REACT/PHICOMPZ,PHICOMPZ1/REACT $
306 315 MATGEN M8EIG,REACT $
307 316 PARTN /VECZR/6/NOZSET/REACT/NOZSET $
308 317 PARTN PHIOZ,VECZR,,PHIOZ1,/ 1 $
309 318 LABEL PHICOMPZ,VECZR,,PHICOMPZ1,/ 1 $
310 319 EQUIV M8EIG $
311 320 IF ( NOBSET>-1 ) PARTN GO,VTBCOMP,,GOZ/GOZ//1 $
312 321 MPYAD GOCOMP,PHICOMPZ1,PHIOZ1/GOZ//1 $
313 322 LABEL MIK45 $
314 323 MATGEN /NULLOQ/7/OMIT/NOZSET $
315 324 ADD NULLOQ,GOZ/GOQ $
316 325 SMPYAD GOQ,KOQ,GOQ,,KQ/3//1//1//6 $
317 326 DIAGONAL KQ/KQDIAG//COLUMN//.5 $
318 327 ADD KQDIAG,/FAPPROX/.15915 $
319 328 MATGPR GPL,USET,SIL,FAPPROX//H//Q//V,Y,PRPHIVZ $
320 329 MPYAD GOQ,MOT,/MOT/1 $
321 330 TRNSP MOT/MTQ $
322 331 SMPYAD GOQ,MOO,GOQ,,/MQQ/3//1//1//6 $
323 332 LABEL NOGOQ $
324 333 EQUIV KQ,KAA/NOTSET/MQ,MAA/NOTSET/GOQ,GOA/NOTSET $
325 334 COND LBL5M,NOTSET $
326 335 MERGE KQ,,KTT,VAQT,/KAA $
327 336 MERGE MQQ,MTQ,MOT,MTT,VAQT,/MAA $
328 337 MERGE GOQ,,GO,,VAQT,/GOA/1 $
329 338 LABEL LBL5M $
330 339 MGEN CASECC,MATPOOL,EST,CSTM/MCHI,MLAM,GEG,MAR,,/LUSET/S,N,NOMGEN/
/WTMASS $
331 340 EQUIV MAA,MMRA /NOMGEN $
332 341 COND NOMGEN,NOMGEN $
333 342 EQUIV GEG,GTEA/NOA $
334 343 COND NOVRED,NOA $
335 344 SSG2 USET,GM,,GOA,,GEG/,GEO,GES,GTEA,/ $
336 345 LABEL NOVRED $
337 346 TRNSP GTEA/GEA $
338 347 DECOMP MCHI/LCHI,UCHI/0 $
339 348 FBS LCHI,UCHI,GEA/BMAT/0 $
340 349 MPYAD MLAM,BMAT,/MEA $

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1 Apr 96

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SUBDMAP = SOL3

N A S T R A N S O U R C E P R O G R A M C O M P I L A T I O N

DMAP-DMAP INSTRUCTION

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OLD NO. NEW NO. ( *-* = INSERTED, *D* = DELETED )
341 350 MPYAD GTEA,MEA,/VMAT/////6 $
342 351 TRNSP VMAT/VMATT $
343 352 ADD5 VMAT,VMATT,MAA ,,/MMAA/(0.5,0.0)/(0.5,0.0) $
344 353 LABEL NOMGEN $
345 354 $ ++++++ DRED ++++++ END
345 354 $ ++++++ SLOAD 17-AUG-1993 ++++++
345 354 LCGEN CASECC,SLT,ETT/CASESX/0/1 $
345 354 SSG1 SLT,BGPDT,CSTM,SIL,EST,MPT,ETT,EDT,MGG,CASESX,DIT,.,.,./
346 355 PG SX,.,/LUSET/1 $
347 356 CASECC,MATPOOL,EQEXIN,SIL,/P2G,.,/LUSET/S,N,NP///2 $
348 357 PGSX,PGS/NP $
349 358 NOP2G,NP $
350 359 ADD PGSX,P2G/PGS/V,N,CPI/V,N,CP2 $
351 360 LABEL NOP2G $
352 361 $ ++++++ DPDD.DP 05 JUNE 1980 ++++++
352 361 LABEL LNOGP $
353 362 DPD DYNAMICS,GPL,SIL,USET,SLT,PGS/
GPLD,SILD,USETD,TPOOL,DLT,PSDL,FRL,NLFT,TRL,EED,EQDYN/
LUSET/S,N,LUSETD/S,N,NOTFL/S,N,NODLT/
S,N,NOPSDL/S,N,NOFRL/S,N,NONLFT/S,N,NOTRL/S,N,NOEED/0/
S,N,NOUE $
PARAML MMAA//PRES'////S,N,NOMGG $
354 363 $ ++++++ READ 2-MAR-1994 ++++++
355 364 SETVAL //S,N,FORM/'MODAL' $
356 365 SETVAL //S,N,ERRNO/4418 $
357 366 SETVAL //S,N,ERRNO/4418 $
358 367 COND ERMSG,NOEED $
359 368 LBLNODM,REACT $
360 369 DIAGONAL MR/MRDIAG/ $
361 370 SETVAL //S,N,NOCSET/0 $
362 371 PARAML MRDIAG//TRAILER'/6/S,N,NP//S,N,NOCSET $
363 372 PARAML //NE'/S,N,NP/NP/10000 $
364 373 SETVAL //S,N,ERRNO/4407 $
365 374 COND ERMSG,NP $
366 375 VEC USET/VACOMPR/'A'/'COMP'/'R' $
367 376 COND LBLNODM,NOLSET $
368 377 VEC USET/VALCOMP/'A'/'L'/'COMP' $
369 378 PARTN VALCOMP,,VACOMPR/VLQ,.,.,/1 $
370 379 MERGE DM,.,.,VLQ/DMLQ/1 $
371 380 LABEL LBLNODM $
372 381 SETVAL //S,N,NOARED/-1 $
373 382 MATMOD CASECC,DYNAMICS,.,.,/23/S,N,NP
374 383 PARAML //EQ'/S,N,INVPW/NP/1 $
375 384 PARAML //EQ'/S,N,NP/NP/0 $
376 385 PARAML //ADD'/S,N,NP/2/NP $
377 386 MATMOD MMAA,KAA,.,.,/VAXW1,MATAA/12/S,N,NOARED/NP $
378 387 COND NOARED1,NOARED $
379 388 EQUIV VAXW1,VAXK/REACT $
380 389 COND NOARED1,REACT $
381 390 PARTN VAXW1,,VACOMPR/VLQXW,.,.,/1 $

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SUBDMAP = SOL3

NASTRAN SOURCE PROGRAM COMPILATION

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DMAP-DMAP INSTRUCTION ( *I* = INSERTED, *D* = DELETED )
OLD NO. NEW NO.
382 391 MERGE VLOXW,,,,, VACOMPR/VAXW/1 $
383 392 PARAML VAXW//''NULL''////S,N,NOARED $
384 393 LABEL NOARED1 $
385 394 EQUIV KAA,XXX/NOARED/MMAA,MXX/NOARED/DMLQ,DMX/NOARED/
      USET,VXCOMPR/NOARED $
386 395 COND LBLNORED,NOARED $
387 396 MATGPR GEL,USET,SIL,VAXW//''H''/'A' $
388 397 COND RFERR,ASING $
389 398 PARTN MMAA,VAXW,MXX,,/-1 $
390 399 PARTN KAA,VAXW,KXXBAR,KWX,,KWW1/-1 $
391 400 EQUIV KXXBAR,KXX/INVPOW $
392 401 COND KINV2,INVPOW $
393 402 PARAML KPX//''NULL''////S,N,NOAOMIT $
394 403 EQUIV KXXBAR,KXX/NOAOMIT $
395 404 COND KINV2,NOAOMIT $
396 405 DECOMP KWW1/LWW1,1////////58 $
397 406 FBS LWW1,,KWX/GWX1/1/-1/0/0 $
398 407 MPYAD GWX1,KWX,KXXBAR/KXX/1////6 $
399 408 LABEL KINV2 $
400 409 COND LBLNORED,REACT $
401 410 PARTN VACOMPR,,VAXW/VXCOMPR,,,/1 $
402 411 PARTN DMLQ,,VLOXW/DMX,,,/1 $
403 412 LABEL LBLNORED $
404 413 SETVAL //S,N,NEIGV/-1 $
405 414 READ KXX,MXX,MR,DMX,EED,VXCOMPR,CASECC,VAXW/
      LAMA,PHIX,MI,OEIGS/'MODES'/S,N,NEIGV $
      LAMA,OEIGS// $
406 415 OFF //S,N,ERRNO/4405 $
407 416 SETVAL ERMGS,NEIGV $
408 417 COND PHIX,PHIA/NOARED $
409 418 EQUIV LBLNOEXP,NOARED $
410 419 COND KINV3,INVPOW $
411 420 COND GWX1,PHIX,/PHIW $
412 421 MPYAD KINV3 $
413 422 LABEL PHIX,PHIW,,,VAXW/PHIA/0 $
414 423 MERGE LBLNOEXP $
415 424 LABEL //''DIAGOFF''//47 $
416 425 PARAM CASECC,EQEXIN,USET,PHIA,LAMA,,/OPHIA,/'REIG'/DIRECT'/0/
417 426 VDR S,N,NP/S,N,NOPREQ/1 $
      LBLSKPH,NP
418 427 COND OPHIA//S,N,CARDNO $
419 428 OFF LBLSKPH $
420 429 LABEL LBLSKPH $
421 430 PARAM //''DIAGON''//47 $
422 431 $ ++++++MODE 20-OCT-1993 ++++++
423 432 JUMP LBLGO $
424 433 PARAM //''NOP'/S,Y,MODACC=-1 $
425 434 PARAM //''NO2'/S,Y,NOSORT1-1 $
426 435 MATGEN ,/PG/3/1 $
427 436 LABEL ,/PG1/3/1 $
      LBLGO $

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SUBDMAP - SOL3

N A S T R A N S O U R C E P R O G R A M C O M P I L A T I O N

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DMAP-DMAP INSTRUCTION
OLD NO. NEW NO. ( *I* = INSERTED, *D* = DELETED )
428 437 SETVAL ///////////////S,N,SOLTYPE/'REIG' $
429 438 PARAM //NOT'/S,N,NODDRMM/-1 $
430 439 CASE CASECC/'CASEXX/'CEIG'/'-1 $
431 440 COND NOMDATA,NOMGEN $
432 441 MDATA CASECC,XVCDB,MAR,MEA,PHIA,LAMA/OEP/SOLTYPE $
433 442 OFF OEP//S,N,CARDNO $
434 443 LABEL NOMDATA $
435 444 PARAM //AND'/S,N,PJUMP/NOPREQ/JUMPPLOT $
436 445 COND P2,PJUMP $
437 446 SCR1 USET,,PHIA,,GOA,GM,KFS,,/UGV,,QG/1/'REIG'/NOSPC $
438 447 PARAM //DIAGOFF'//47 $
439 448 SCR2 CASECC,CSTM,MPT,DIT,EQEXIN,,ETT,,BGPD,T,LAMA,QG,UGV,EST,
XVCDB,,/OPG1,QQG1,OUGV1,OES1,OEF1,PUGV/SOLTYPE/S,N,NOSORT2 $
440 449 JUMP LSORT1 $
441 450 S ++++++ DR1 14-FEB-1991 ++++++
442 451 LABEL LSORT1 $
443 452 OFF OUGV1,OPG1,QQG1,OEF1,OES1//S,N,CARDNO $
444 453 COND LS1,S1 $
445 454 STRSORT OES1,/OES1X1/V,Y,NUMOUT=-2/V,Y,BIGER=0.0/V,Y,SRTOPT=0/
V,Y,SRTELTYP=0 $
446 455 OFF OES1X1//S,N,CARDNO $
447 456 LABEL LS1 $
448 457 COND LSIG,CURV $
449 458 CJR1 //NOP'/S,Y,S1=-1/V,Y,S1M=-1/V,Y,SIG=-1 $
OES1,MPT,CSTM,EST,SIL,GPL/OES1M,OES1G/V,Y,OUTOPT/
V,Y,OG/V,Y,NINTPTS=10 $
450 459 COND LSIM,SIM $
451 460 STRSORT OES1M,/OES1M/NUMOUT/BIGER/SRTOPT/SRTELTYP $
452 461 OFF OES1M//S,N,CARDNO $
453 462 LABEL LSIM $
454 463 STRSORT OES1G,/OES1G/NUMOUT/BIGER/SRTOPT/SRTELTYP $
455 464 OFF OES1G//S,N,CARDNO $
456 465 LABEL LSIG $
457 466 COND NOXYPL,NOXYCDB $
458 467 COND NOXYPL,CURVELOT $
459 468 CURVELOT EQEXIN,BGPD,T,EDT,XVCDB,OPG1,QQG1,OUGV1,OES1G,/
OPG2X,QQG2X,OUG2X,OES2X,/V,Y,DOPT=0 $
460 469 XYTRAN XVCDB,OPG2X,QQG2X,OUG2X,OES2X,'/SET1'/'PSET'/'
S,N,PFILE/S,N,CARDNO/S,N,NE $
461 470 COND NOXYPL,NE $
462 471 XYPLOT XYPLTS// $
463 472 LABEL NOXYPL $
464 473 COND P2,NODDRMM $
465 474 COND LNOEDR,GFFDR $
466 475 GFFDR CASEXX,UGV,KELM,KDICT,ECT,EQEXIN,GPECT,PGL,QG,BGPD,T,SIL,CSTM,
VELEM,/ONRGY1,OGPFBL/SOLTYPE/V,Y,TINY $
467 476 COND LNOESE,ESE $
468 477 OFF ONRGY1//S,N,CARDNO $
469 478 LABEL LNOESE $
470 479 COND LNOGPF,GPFO $

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SUBDMAP = SOL3

N A S T R A N S O U R C E P R O G R A M C O M P I L A T I O N

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DMAP-DMAP INSTRUCTION
OLD NO. NEW NO. COND
471 480 COND LNOGPF,NOGPF $
472 481 OFF OGPFBI // $
473 482 LABEL LNOGPF $
474 483 PARAM //AND'/S,N,SKPEDR/V,Y,NOELOF=-1/V,Y,NOELOP=-1 $
475 484 COND LNOEDR,SKPEDR $
476 485 ELFDR OGPFBI,GPECT,CSTM,SIL,GPL,BGPD/OELOF1,OELOP1/
V,Y,NOELOF/V,Y,NOELOP$
477 486 COND LNOELF,NOELOF $
478 487 OFF OELOF1 // $
479 488 LABEL LNOELF $
480 489 COND LNOEDR,NOELOP $
481 490 OFF OELOP1 // $
482 491 LABEL LNOEDR $
483 492 COND P2,JUMPPLLOT $
484 493 PLTSET PCDB,EQEXIN,ECT/PSMES,PLTPAP,GPSETP,ELSETP/S,N,DSIL/V,N,DJ $
485 494 PRMSG PSMES// $
486 495 PLOT PLTPAP,GPSETP,ELSETP,CASEXX,BGPD,EOEXIN,SIL,PUGV,GPECT,
OES1/PLOTX2/DSIL/LUSET/JUMPPLLOT/PLTFLG/S,N,FILE $
487 496 PRMSG PLOTX2// $
488 497 LABEL P2 $
489 498 $ ++++++ ERRUT.DP 19 JUNE 1980 ++++++
489 498 JUMP FINIS $
490 499 LABEL RFERR $
491 500 PRTPARM ///1 $
492 501 JUMP FINIS $
493 502 LABEL ERMSG $
494 503 PRTPARM //ERRNO/'DMAP' $
495 504 LABEL FINIS $
496 505 END $

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NASTRAN SOURCE PROGRAM COMPI LATION SUBMAP = SOL3

MODULE NAMES *** DMAP CROSS-REFERENCE ***

INTERPRETED FROM THE OSCAR. NEGATIVE DMAP INDICATES A NON EXECUTABLE INSTRUCTION

ADD	69	81	86	90	159	198	282	292	324
ADD5	327	359							
CASE	352								
CURV	439								
CURVELOT	458								
DECOMP	468								
DIAGONAL	150	184	283	347	405				
DPD	133	157	158	196	197				
DYCNTRL	362								
DYNREDU	280								
ELFDR	302								
ELTPRT	485								
EMA	28	47	50	64					
EMG	54	57	61						
FBS	52	59							
GP1	171	348	406						
GP2	24								
GP3	26								
GP4	42								
GPFRD	95								
GPSP	475								
GPWG	104								
LCGEN	73								
MATGEN	354								
MATGPR	306	315	323	434	435				
MATMOD	132	135	161	168	200				
MCE1	328	396	297	382	386				
MCE2	166	204							
MCE3	98								
MCE4	102	214							
MCE5	441								
MCE6	268								
MCE7	339								
MCE8	131	134	172	241	242				
MCE9	350	407	421						
MCE10	66	356	428	442	451				
MCE11	74	415	490						
MCE12	481	487							
MCE13	12	13	14	15	16				
MCE14	77	78	106	107	113				
MCE15	232	234	236	237	256				
MCE16	383	384	385	425	430				
MCE17	447	457	483	484	485				
MCE18	7	8	9	10	11				
MCE19	233	235	363	371	392				
MCE20	154	193	287						
MCE21	129	144	229	263	264				
MCE22	317	320-1	378	390	398				
MCE23	38	495							
MCE24	32								
MCE25	34	493							
MCE26	36	39	494	496					
MCE27	160	199	500	503					
MCE28	210								
MCE29	249								
MCE30	414								
MCE31	126								
MCE32	1								
MCE33	446								
MCE34	218								

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N A S T R A N S O U R C E P R O G R A M C O M P I L A T I O N									
EXECUTIVE NAMES		* * * D M A P C R O S S - R E F E R E N C E		S U B D M A P		* * *		S O L 3	
INTERPRETED FROM THE OSCAR. NEGATIVE DMAP INDICATES A NON EXECUTABLE INSTRUCTION									
COND	21	25	27	30	37	44	46	49	53
	56	60	63	68	72	80	84	89	97
	101	108	111	114	116	120	122	125	138
	141	142	149	151	153	155	163	167	177
	178	182	185	187	192	194	201	205	209
	213	217	221	224	227	239	245	247	253
	254	258	261	271	273	281	284	286	288
	294	298	308	314	334	341	343	358	367
	368	374	376	387	389	395	397	401	404
	409	417	419	420	427	440	445	452	456
	459	466	467	470	473	474	476	479	480
	484	486	489	492					
EXIT	505								
IF	255								
JUMP	93	320	164	169	180	199	202	207	295
	300	431	449	498	501				
MESSAGE	255-1								

NAME	TOTAL NAME COUNT	5
...	...	...

TOTAL NAME COUNT = 76

INTER-RELATED FACILITIES									
ASET	95	0							
AVDIAG	290	0	292						
AVV	282	0	283			290		297	
AXIC	1								
B2GG	66	0	90						
BDICT	59	0	61						
BELM	59	0	61						
BGG	88	0	90	0					
BGGX	61	0	88		90				
BGPDT	24	0	32		33-2				
	95		127		355				
BMAT	348	0	349		43				
CASECC	1		7		448				
	302		339		9				
	448				356				
CASESX	354	0	355						
CASEXX	439	0	475						
CSTM	24	0	32		50				
	64		73		127				
	485				355				
DIT	1		52						
DLT	362	0							
DM	176	0	210	0	249				
DMI	1								
DMINDX	1								
DMLQ	379	0	394-2		411				
DMX	394-2	0	411	0	414				
DTI	1								
DTINDX	1								
DYNAMICS	1		280						
ECT	26	0	28		362				
EDT	1		355		33-1				
EED	362	0	414						
ELSETP	493	0	495						
ELSETS	19-3	0	34	0					
EPT	1		22		32				
EQDYN	362	0			43				
EQEXIN	24	0	26						
	109		127						
	495								
EST	43	0	50						
ETT	42	0	43						
FAPPROX	327	0	328						
FORCE	1								
FRL	362	0							
GEA	346	0	348						
GEG	339	0	342						
GEI	43	0	85						
GEO	344	0							
GEOM1	1		20						

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NASTRAN SOURCE PROGRAM COMPILATION SUBMAP - SOL3
DATABLOCK NAMES ** * DMAP CROSS-REFERENCE ** *
INTERPRETED FROM THE OSCAR, NEGATIVE DMAP INDICATES A NON EXECUTABLE INSTRUCTION 335

KT	137	0	148	0	172	0	174	175	179	274	335
KT1	140-1	0	145	0	148	0	172	272			
KV	270	0	278	0	280		282				
KW1	399	0	405								
KW	399	0	402		406		407				
KX	394	0	400	0	403	0	407	414			
KXBAR	399	0	400		403		407				
LAMA	414	0	415		426		441	448			
LCHI	347	0	348								
LDIAG	158	0	159								
LDIAGL	197	0	198								
LLL	184	0	197		210						
LOO	150	0	158		171						
LVDIAG	291	0	292								
LVV	283	0	291		302						
LW1	405	0	406								
M2GG	66	0	69								
MAA	251	0	333-1	0	336	0	340	352			
MAA1	222	0	223-1		225		228				
MAR	339	0	441								
MATAA	386	0									
MATPARM	22	0									
MATPOOL	1		66		339		356				
MCHI	339	0	347								
MCOMP	259	0	263	0	268						
MCOMPO	266	0	268								
MDICT	52	0	57		441						
MEA	349	0	350								
MECH	159	0	161								
MECHL	198	0	200								
MECHV	292	0	293								
MELM	52	0	57								
MFF	216	0	218	0	220		222	214	255		
MGG	67	0	69	0	73		212				
MGGX	57	0	67		69						
MI	414	0									
MLAM	339	0	349								
MLL	248	0	249								
MLR	248	0	249								
MMAA	340	0	352	0	363		386	394-1	398		
MNN	212	0	214	0	216		218				
MOA	222	0	223	0	225-1		229				
MOCOMP	260	0	264	0	266		268				
MOO	222	0	241	0	257		268	331			
MOQ1	225-1	0	229	0	235						
MOT	241	0	243	0	329		242	260	264		
MOT1	223	0	229	0	241		355	448	458		
MPT	1		52		59						
MQQ	331	0	333-1		336						
MQQ1	225	0	228	0	233						

N A S T R A N		S O U R C E		P R O G R A M		C O M P I L A T I O N		S U B D M A P		R E F E R E N C E		S O L I	
D A T A B L O C K		N A M E S		N A M E S		N A M E S		N A M E S		N A M E S		N A M E S	
I N T E R P R E T E D F R O M T H E O S C A R.		N E G A T I V E D M A P I N D I C A T E S A N O N E X E C U T A B L E I N S T R U C T I O N		D M A P I N D I C A T E S A N O N E X E C U T A B L E I N S T R U C T I O N		D M A P I N D I C A T E S A N O N E X E C U T A B L E I N S T R U C T I O N		D M A P I N D I C A T E S A N O N E X E C U T A B L E I N S T R U C T I O N		D M A P I N D I C A T E S A N O N E X E C U T A B L E I N S T R U C T I O N		D M A P I N D I C A T E S A N O N E X E C U T A B L E I N S T R U C T I O N	
PHIA	418	0	423	0	441	446							
PHIAZ	307-2	0	312	0	426	441							
PHICOMPZ	310	0	311	0	313-1	317							
PHIOZ	307-1	0	310	0	313	316							
PHIOZ1	313	0	316	0	321								
PHITZ	311	0	312	0	307	307-1	310						
PHIVZ	302	0	303	0	421	423							
PHIW	421	0	423	0	421	423							
PHIX	414	0	418	0	39								
PLOTX1	38	0	496	0	495								
PLOTX2	495	0	495	0	38								
PLTPAP	493	0	34	0	36								
PLTPAR	19-1	0	34	0	36								
PLTSETX	34	0	36	0	448	475							
POSTCDB	1	0	33-3	0	38								
PSDL	362	0	446	0	448	475							
PSIL	32	0	494	0	495								
PSMES	493	0	495	0	448	475							
PPUGV	448	0	495	0	448	475							
PVT	1	0	446	0	448	475							
QG	19	0	446	0	448	475							
RBFF	129	0	130	0	131								
RBFT	130	0	129	0	98								
RBGLOBAL	127	0	98	0	33-3	43	47	54	57	168	362	61	
RG	95	0	32	0	104	132	135	161	200	356	396	200	
SIL	24	0	95	0	303	328	355	375	377			214	
SIL	66	0	299	0	495							303	
SIL	293	0	485	0	355	362						394-3	
SIL	475	0	354	0	475	126	128	132	135	206	299		
SIL	362	0	348	0	475	109	168	200	206	299	377		
SIL	42	0	105	0	109	179	267	293	377				
SIL	362	0	161	0	248	262	362						
SIL	362	0	228	0	328	344							
SIL	362	0	311	0	102	104							
SIL	426	0	446	0	9								

N A S T R A N S O U R C E P R O G R A M C O M P I L A T I O N S U B D M A P = S O L 3
 D A T A B L O C K N A M E S * * * D M A P C R O S S - R E F E R E N C E * * *
 I N T E R P R E T E D F R O M T H E O S C A R . N E G A T I V E D M A P I N D I C A T E S A N O N E X E C U T A B L E I N S T R U C T I O N

VLOXW	390	0	391	411		
VMAT	350	0	351	352		
VMATT	351	0	352			
VTBCOMP	262	0	263	264	274	275 320-1
VVOC	309	0	310			
VVOCOMP	267	0	268	278		
VXCOMPR	394-3	0	410	0	414	
XYCDB	1	0	10	441	448	468 469
XYPLTS	469	0	471			
XS	104	0				
YSB	95	0	104			
TOTAL NAME COUNT =					247	

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NASTRAN SOURCE PROGRAM COMPI LATION SUBDMAP - SOL3
PARAMETER NAMES ** * DMAP CROSS-REFERENCE ** *
INTERPRETED FROM THE OSCAR. NEGATIVE DMAP INDICATES A NON EXECUTABLE INSTRUCTION

PARAMETER	NAME	95	97	101	213	184	191	283	S	285	394-1	394-2	394-3	395
MECF2	I	95	S											
MECX	I	22												
NBRCH	I	150	S	152		184	S	191		283	S			
NEIGV	I	413	S	414	S	417								
NEWSEQ	I	20		21	22									
NGERR	I	104	S	111										
NHBDY	I	32	S	33										
NINTPTS	I	458												
NM	I	230	S	233	S	235	S							
NOA	I	95	S	106	S	107		342		343				
NOAMIT	I	402	S	403		404								
NOARED	I	381	S	386	S	387		392	S	394		394-1	394-2	395
	I	418		419										
NOASET	I	105	S	106		306								
NOB2GG	I	66	S	78		88		89						
NOBGG	I	78	S											
NOBGX	I	6	S	59		60		78						
NOBSET	I	105	S	259		260		261		272		273		319
NOCSET	I	105	S	256		305		270	S	371	S			
NODDRUM	I	438	S	473										
NODLT	I	362	S											
NODYNRED	I	113	S	254										
NOEED	I	362	S	367										
NOELOF	I	483		485		486								
NOELOP	I	483		485		489								
NOFRL	I	362	S											
NOGENL	I	43	S	77		83		84		85				
NOGPD	I	24	S	25										
NOGPF	I	12		480										
NOGRAV	I	42												
NOGSET	I	105	S	106										
NOK2GG	I	66	S	76		79		80						
NOK4GG	I	52	S	63		64								
NOKGG	I	76	S	77	S	77								
NOKGGX	I	4	S	52	S	53		76						
NOL	I	95	S											
NOLSET	I	105	S	120		177		246		247				
NOM2GG	I	66	S	67		68		71						
NOMGEN	I	339	S	340		341		440						
NOMGG	I	71	S	363	S									
NOMGGX	I	5	S	52	S	56		71						
NONLFT	I	362	S											
NOPREQ	I	426	S	444										
NOPSDL	I	362	S											
NOQSET	I	105	S	114		140		140-1		141		223	223-1	224
	I	251		252		253		280		323				
NOSET	I	95	S	104	S	107	S							
NOSIMP	I	43	S	44										
NOSORT1	I	433	S											
NOSORT2	I	448	S											

NASTRAN SOURCE PROGRAM COMPI LATION SUBMAP = SOL3
PARAMETER NAMES *** DMAP CROSS - REFERENCE ***
INTERPRETED FROM THE OSCAR. NEGATIVE DMAP INDICATES A NON EXECUTABLE INSTRUCTION

START	I	22	
SUBID	I	95	
SUPER	I	22	
TINY	RS	475	
USETPRT	I	108	109
USETSEL	I	109	
WTMASS	RS	57	73 339
TOTAL NAME COUNT =			145

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NASTRAN SOURCE PROGRAM COMPI LATION SUBMAP = SOL3
BCD CONSTANT VALUES *** DMAP CROSS - REFERENCE ***
INTERPRETED FROM THE OSCAR, NEGATIVE DMAP INDICATES A NON EXECUTABLE INSTRUCTION

	105	139	143	145	222	228	312	375	377
A	105	139	143	145	222	228	312	375	377
ADD	396	234	236	304	385				
ALL	232	135	161	168	200	206	293	299	303
AND	132	396	71	76	77	78	107	256	305
B	15	16							
C	444	483	311						
CEIG	105	311							
COLUMN	439								
COMP	157	158	196	197	290	291	326	369	
DIAGOFF	128	262	267	309	375	377			
DIAGON	425	447							
DIRECT	430								
DMAP	426								
DTI	160	199	503						
EQ	7	8	9	112					
F	106	383	384	139	222				
G	128	132	135	285	293	299	303	328	396
GT	22	105	128	206	248	377			
H	152	191	237						
HSET	161	168	200						
L	365	179	200	206					
LE	105	193	287						
MODAL	154	364							
MODES	280								
NE	414								
NOP	186	372	162	432	433	457			
NOT	17	45	14	113	438				
NULL	12	13	402						
O	147	392	161	168	222	267	309		
PEAK	105	139							
PRES	448		363						
PSET	10	11							
Q	469								
R	105	143	145	228	312	328			
REIG	105	179	248	375					
RESULTAN	426	437	446						
S	127								
SET1	105								
STATICS	355								
T	105	127	143	145	179	228	248	262	311
TRAILER	312								
USET	230	233	235	371					
V	105	109	188						
VECTOR	105	267	293	299	303	309			
X	127	135							
XXXXXXX	132								
	500								

TOTAL NAME COUNT = 46

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NASTRAN SOURCE PROGRAM COMPI LATION SUBDMAP = SOL3
 BCD CONSTANT VALUES *** DMAP CROSS-REFERENCE ***
 INTERPRETED FROM THE OSCAR. NEGATIVE DMAP INDICATES A NON EXECUTABLE INSTRUCTION

```

+-----+
+ KEY TO FLAGS IN DMAP CROSS REFERENCE LISTING +
+
+ * - SIGNIFIES THAT A VARIABLE IS DB-STORED +
+ L - REPRESENTS THE LABEL STATEMENT DMAP NUMBER +
+ O - SIGNIFIES THAT THE A DATABLOCK IS AN OUTPUT +
+ S - SIGNIFIES THAT THE PARAMETER IS SAVED +
+-----+

```

CASE CONTROL DECK ECHO

CARD	
COUNT	
1	\$ TITLE = LARGE FIELD DATA TRANS ALTER 126 EQUILIB CHECK - METSAT
2	\$
3	\$
4	\$ ADDED CBARS TO UPPER AND LOWER REFLECTORS
5	\$ MODIFIED GRIDS IN UPPER WARMLOAD (PUT IN PLANE)
6	\$
7	\$
8	\$
9	\$ SIDEMOUNT - PUT GRIDS IN LOCAL ANALYSIS COORD SYSTEMS
10	\$ FOR SKEWED PLANES
11	\$ SURFACE LOCAL ANALYSIS COORD SYS
12	\$ 419 20
13	\$ 628 29
14	\$ 376 25
15	\$ 510,511 26
16	\$ 469,471,472 27
17	\$ 417,418 28
18	\$ 423,424,425 24
19	\$ 410 22
20	\$
21	\$ LOWER BASEPLATE T=-200 RIDGE BELOW LOWER AFT PANEL REMOVED
22	\$ IN METSAT (SET TO T=-.060)
23	\$
24	\$ PANEL FLANGES INCREASED TO REQ'D EOS/METSAT LEVELS
25	\$ UPPER FRONT PANEL (1331352) RIB PUT BACK TO T=-.07 (WAS .08)
26	\$
27	\$ UP CARD CAGE TOP PANEL (1331162-3) PUT BACK TO T=-.05 (WAS .06)
28	\$
29	\$ LOWER BASEPLATE CBAR OFFSETS ADDED
30	\$ PBAR 5 COORD 0 <0, .3125, 0> PBAR 6 COORD 0 <0, .156, 0>
31	\$
32	\$ 1331404 LOWER BASEPLATE CONCEPT (METSAT)
33	\$
34	\$ 1331552 SIDEMOUNT ADDED W/RATIOED DENSITY TO GIVE 12.50 LB
35	\$
36	\$ SIGNAL PROCESSOR/CARD CAGES
37	\$ NO CHANGE TO LOWER CARD CAGE FROM EOS
38	\$ 2 CARDS PUT IN UPPER CARD CAGE (W = 2 X .30 LB)
39	\$
40	\$ 1331648 TOP PANEL MODELED (ADDED FLAPS AROUND SIDEMOUNT)
41	\$
42	\$ 1331640 LEFT PANEL NEW T=-.050 (WAS .062 ON EOS) ALSO REMOVED NON
43	\$ STRUCTURAL MASS SINCE NO MIRRORS ARE APPLIED TO METSAT LEFT PNL
44	\$
45	\$ NEW POWER CONTROL/MONITOR FILTER BOX 1356907 REPLACES 1356761
46	\$ NO FILTERS IN METSAT, ALSO ENCLOSURE LOWER COVER REMOVED
47	\$
48	\$ ADD 1331336 ALIGNMENT CUBE MASS TO UPPER MOTOR MOUNT
49	\$
50	\$ ADD 1331097 CARD RETAINER MASS TO UPPER RIGHT PANEL

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- METSAT

LARGE FIELD DATA TRANS ALTER 126 EQUILIB CHECK

C A S E C O N T R O L D E C K E C H O

CARD
COUNT

```

51 $
52 $ ADD INSULATION MASS TO SIDEMOUNT (8 CONM2'S 10677-10684)
53 $
54 $ REMOVED INSULATION NSM FROM LEFT PANEL AND COVERS
55 $
56 $ REVISED UPPER CARDS RETENTION AT TOP AND BOTTOM OF CARDS
57 $ (EXTENDED THE RETENTION LENGTH)
58 $
59 $ CORRECTED SOME FREE SURFACES IN UPPER CARDS
60 $
61 $ PROVIDED AN EFFECTIVE THICKNESS FOR TOP PANEL W/MIRRORS
62 $ THAT TAKES INTO EFFECT THE .010 EPOXY-GLASS SHEET
63 $ (INCREASES EFFECTIVE T TO .064 (WAS .062) AND RAISES
64 $ 1ST MODE TO 101.7 HZ)
65 $
66 $
67 $ REMOVE ALL SPC'S
68 $
69 $ ECHO = NONE
70 $
71 $ SUBCASE 1
72 $ SUBCASE NAME : DEFAULT
73 $ SUBTITLE=DEFAULT
74 $ METHOD = 1
75 $ VECTOR(SORT1,REAL)=ALL
76 $ SPCFORCES(SORT1,REAL)=ALL
77 $ BEGIN BULK

```

INPUT BULK DATA CARD COUNT = 41898

TOTAL COUNT= 41291

SEQUENCE PROCESSOR OUTPUT

THERE ARE 9095 POINTS DIVIDED INTO 1 GROUP(S).

CONNECTION DATA

ELEMENT TYPE	NUMBER	ASSEMBLY TIME (SEC)
BEAM	124	0.13
ELAS1	28	0.00
QUAD4	8089	16.99
BAR	908	0.82
TRIA3	664	0.66

TOTAL MATRIX ASSEMBLY TIME FOR 9813 ELEMENTS IS 18.60 SECONDS.

RIGID ELEMENT PROCESSING COMPLETED.

ORIGINAL PERFORMANCE DATA

SUPER(GROUP) ID	NO. GRIDS	AV. CONNECTIVITY	C-AVERAGE	C-RMS	C-MAXIMUM	P-GROUPS	P-AVERAGE	DECOMP TIME (SEC) (6.0 DOF/GRID)
0	9095	8.67	517.78	607.81	1065	95	545.17	62000.746

RESEQUENCED PERFORMANCE DATA

SUPER(GROUP) ID	NO. GRIDS	AV. CONNECTIVITY	C-AVERAGE	C-RMS	C-MAXIMUM	P-GROUPS	P-AVERAGE	DECOMP TIME (SEC) (6.0 DOF/GRID)	METHOD
0	9095	8.67	137.73	158.38	264	0	0.00	4341.884	ACTIVE

*** USER WARNING MESSAGE 3041 MODULE - GPWG

EXTERNAL GRID POINT 18 DOES NOT EXIST OR IS NOT A GEOMETRIC GRID POINT.
THE BASIC ORIGIN WILL BE USED.

OUTPUT FROM GRID POINT WEIGHT GENERATOR

```

REFERENCE POINT = 0
MO
* 3.860000E+10 -4.006258E-18 1.046529E-17 2.495115E-22 3.635364E+11 -1.979514E+11 *
* -4.006258E-18 3.860000E+10 -1.831423E-17 -3.635364E+11 2.300725E-16 6.053703E+11 *
* 1.046529E-17 -1.831423E-17 3.860000E+10 1.979514E+11 -6.053700E+11 -1.466773E-16 *
* 2.495115E-22 -3.635364E+11 1.979514E+11 4.438950E+12 -3.104503E+12 -5.701399E+12 *
* 3.635364E+11 2.300725E-16 -6.053700E+11 -3.104503E+12 1.291791E+13 -1.864315E+12 *
* -1.979514E+11 6.053700E+11 -1.466773E-16 -5.701399E+12 -1.864315E+12 1.050926E+13 *
S
* 1.000000E+00 0.000000E+00 0.000000E+00 0.000000E+00 *
* 0.000000E+00 1.000000E+00 0.000000E+00 0.000000E+00 *
* 0.000000E+00 0.000000E+00 1.000000E+00 0.000000E+00 *
DIRECTION
MASS AXIS SYSTEM (S)
X MASS X-C.G. Y-C.G. Z-C.G.
Y 3.860000E+10 6.464029E-33 5.128275E+00 9.418041E+00
Z 3.860000E+10 1.568316E+01 5.960427E-27 9.418041E+00
I (S)
* 0.000000E+00 -2.621440E+05 -5.242880E+05 *
* -2.621440E+05 -1.835308E+06 1.310720E+05 *
* -5.242880E+05 1.310720E+05 -2.097152E+06 *
I (Q)
* -1.781354E+06 -2.300280E+06 *
* * 1.494746E+05 *
Q
* 1.535264E-02 2.466396E-01 9.689855E-01 *
* -9.142155E-01 -3.890084E-01 1.135007E-01 *
* 4.049373E-01 -8.876042E-01 2.195095E-01 *

```

LARGE FIELD DATA TRANS ALTER 126 EQUILIB CHECK - METSAT

*** USER WARNING MESSAGE 3041 MODULE - VECPLOT

EXTERNAL GRID POINT 18 DOES NOT EXIST OR IS NOT A GEOMETRIC GRID POINT.
THE BASIC ORIGIN WILL BE USED.

LARGE FIELD DATA TRANS ALTER 126 EQUILIB CHECK - METSAT

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POINT	KFFR	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE
COLUMN	1 (	4003-T1).								
COLUMN	2 (	4003-T2).								
COLUMN	3 (	4003-T3).								
COLUMN	4 (	4003-R1).								
2166 T1	3.39045E-02	2166 R2	1.15137E-02	2167 R2	1.44013E-02	3343 T1	-2.42962E-02	3343 R2	-2.83282E-02	
3357 T1	-4.76191E-02	3357 R2	-1.02337E-02	3342 T1	8.17207E-02	2168 T1	-3.95110E-02	2168 R2	1.44814E-02	
7248 T1	2.09117E-02	7238 T1	2.31287E-02	7247 R2	-1.95223E-02	7247 R3	1.62478E-02	7237 T1	-5.82559E-02	
7236 T1	1.02005E-02	7104 T1	-1.08867E-02	7288 T1	-4.31142E-02	7288 R2	1.18344E-02	7289 R2	2.91412E-02	
7289 R3	2.37814E-02	7290 T1	6.39906E-02	7102 T1	-3.44161E-02	7103 T1	1.62626E-02	8080 T3	3.53908E-02	
7766 T3	-1.46014E-02	8079 T3	1.56449E-02	8067 R1	-1.03463E-02	7136 T1	-1.08868E-02	7321 T1	-4.31142E-02	
7321 R2	1.18344E-02	7322 R2	2.91412E-02	7322 R3	2.37813E-02	7323 T1	6.39906E-02	7134 T1	-3.44161E-02	
7135 T1	1.62626E-02	8068 R1	-1.03457E-02	8013 T3	1.56792E-02	8069 T3	-2.12298E-02	8069 R1	-1.28255E-02	
8070 R1	-1.24957E-02	8072 R1	-1.01001E-02	8074 T3	1.25778E-02	8073 T3	2.05607E-02	8073 R1	-1.13327E-02	
8039 T3	-1.72319E-02	8061 T3	-1.74635E-02	8064 T3	-2.29363E-02	8213 T1	-2.30251E-02	8213 R2	-1.23579E-02	
8219 T1	3.50399E-02	8299 T2	1.11601E-02	8298 T2	1.03020E-02	8298 R1	-1.19298E-02	8296 T2	-1.48798E-02	
8297 T2	-1.20604E-02	8295 T2	1.92736E-02	8294 R1	-1.19219E-02	8293 R3	-1.43147E-02	8292 T2	-1.33642E-02	
8291 T2	2.85337E-02	8289 T2	-1.10447E-02	8289 R3	-1.66890E-02	8285 T2	-1.21020E-02	8280 T2	-1.35887E-02	
8281 R1	-1.25910E-02	10593 T1	1.19863E-02	10504 R3	1.35789E-02	10575 R3	-1.33035E-02	10508 T1	2.10348E-02	
10580 T1	-1.32567E-02	8279 T2	2.42092E-02	8274 T2	-1.06638E-02	8275 R3	-1.23899E-02	10871 T1	1.97601E-02	
10869 T1	2.35442E-02	10867 R3	1.56718E-02	10464 T1	-1.38416E-02	10560 T1	-1.41045E-02	8273 T2	1.23908E-02	
8271 R1	-1.16039E-02	8270 R1	-1.57405E-02	8269 T2	-1.41286E-02	8269 R3	-1.24025E-02	10874 T1	5.94188E-02	
10874 R2	6.40415E-02	10874 R3	1.93559E-02	10465 T1	-1.26481E-01	10465 R2	2.72777E-02	10561 T1	7.24320E-02	
10553 T1	-7.65151E-02	10553 R2	-1.05479E-02	10466 T1	6.07909E-02	10466 R2	-1.33429E-02	10466 R3	-1.24550E-02	
8336 T3	-1.81155E-02	8401 T3	1.81155E-02	8334 T3	-1.81156E-02	8400 T3	1.81156E-02	8264 R1	-1.20438E-02	
8263 R1	-1.53075E-02	8263 R3	-2.15841E-02	8262 T2	-1.60649E-02	8257 R3	-1.24836E-02	7844 T1	-5.82627E-02	
7847 T1	5.65272E-02	8216 T1	-1.02793E-02	8399 T3	-1.30140E-02	7861 T1	3.95770E-02	7861 R3	1.33432E-02	
7848 T1	-6.49823E-02	7849 T1	2.54053E-02	10610 T1	2.23465E-02	10664 T1	1.72939E-02	10664 R3	1.02857E-02	
10665 T1	-4.17255E-02	9178 T1	2.19955E-02	9179 T1	1.73571E-02	10656 T1	-5.58442E-02	10656 R2	1.63810E-02	
10656 R3	-1.26930E-02	10786 T1	9.38752E-02	10786 R3	-3.62797E-02	9187 R2	1.22774E-02	9188 R2	1.18990E-02	
10555 T1	-3.32389E-02	10655 R2	-2.17256E-02	10647 T1	1.54903E-02	10647 R2	-1.59271E-02	10647 R3	-2.27672E-02	
10790 T1	8.82246E-02	10790 R2	1.52235E-02	10796 R2	3.51950E-02	10793 T1	1.42671E-02	10793 R2	6.35365E-02	
10793 R3	3.49977E-02	10796 T1	-1.51186E-01	10796 R2	1.07697E-02	10796 R3	1.62465E-02	9197 T1	-1.43412E-02	
9198 T1	-1.43412E-02	10628 T1	6.33417E-02	10628 R2	-1.87824E-02	9223 R3	1.15167E-02	9222 T1	-1.87614E-02	
9222 R3	1.43540E-02	10458 T1	-4.83646E-02	10452 T1	1.34348E-02	9227 R2	-1.03309E-02	9237 T1	1.09608E-02	
9802 R3	1.06947E-02	8479 T3	4.35084E-02	8479 R1	-1.12134E-02	8478 T3	3.66985E-02	8478 R2	1.68333E-02	
8477 R2	1.11804E-02	8476 T3	-1.28929E-02	8476 R2	1.66078E-02	8474 T3	-4.50485E-02	8475 T3	-1.63056E-02	
8471 T3	-3.05114E-02	8470 T3	3.08621E-02	8469 T3	2.27220E-02	8465 T3	-1.06882E-02	8463 T3	1.13850E-02	
8454 T3	-2.12849E-02	8461 T3	-1.17536E-02	8459 T3	-1.33773E-02	8457 T3	1.10488E-02	8455 T3	-1.161330E-02	
8454 T3	1.07911E-02	8443 R2	-1.00161E-02	8442 T3	-1.17021E-02	8441 T3	-1.46174E-02	8439 R2	-1.17844E-02	
8437 R2	-1.60955E-02	8436 T3	-1.06526E-02	8435 T3	3.18258E-02	8432 T3	3.69613E-02	8431 T3	1.64014E-02	
8431 R2	-1.1106E-02	8430 T3	-1.53797E-02	8428 T3	3.67166E-02	8429 T3	-2.00337E-02	8429 R1	1.17221E-02	
8420 T3	-1.38775E-02	8425 R1	1.42226E-02	8424 R1	1.02830E-02	8423 T3	1.63469E-02	8422 T3	-1.67845E-02	
8420 T3	-1.08843E-02	8415 R1	-1.22709E-02	8414 T1	2.91527E-02	8413 T3	-2.26754E-02	8412 R1	-1.12599E-02	
8414 R2	1.43026E-02	8774 T1	2.93807E-02	8804 T1	-7.38691E-02	8804 R3	1.66575E-02	8763 T1	4.44785E-02	
8744 T1	-2.93907E-02	8800 T1	7.38691E-02	8800 R3	-1.66575E-02	8741 T1	-4.44785E-02	8700 T1	-4.44782E-02	
8788 T1	-8.50372E-02	8788 R2	3.81033E-02	8788 R3	-1.66575E-02	8695 T1	5.00622E-02	8691 T1	7.94532E-02	

POINT	KFFR	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE
3795 T1	-1.14123E-02		3775 T1	1.20185E-02	3796 T1	-1.14182E-02	3776 T1	1.20185E-02	3797 T1	1.14269E-02
3777 T1	-1.20185E-02		3794 T1	1.14064E-02	3771 T1	-1.20185E-02	6336 R3	-1.50683E-02	6338 R3	1.50683E-02
6340 R2	-1.42288E-02		6333 T1	4.22603E-02	6335 T1	-4.22603E-02	6323 T1	4.22603E-02	6321 T1	-4.22605E-02
6320 R3	-1.50683E-02		6318 R3	1.50683E-02	6316 R2	-1.42288E-02				
COLUMN 5 (4003-R2) .										
7256 T2	-1.26970E-02		7365 T2	-1.25634E-02	7365 R3	1.03491E-02	7363 R3	1.32247E-02	7361 T2	1.14716E-02
7361 R3	1.02604E-02		7359 T2	1.53098E-02	7622 T2	4.50802E-02	7626 T2	-4.50806E-02	7635 T3	1.49346E-02
8080 T3	-6.55593E-02		8080 R1	-1.17887E-02	8080 R2	1.24792E-02	7766 T3	2.70482E-02	8079 T3	-2.89814E-02
8067 R1	1.91659E-02		8068 R1	1.91648E-02	8013 T3	-2.90448E-02	8069 T3	3.93269E-02	8069 R1	2.37585E-02
8070 T3	-1.65275E-02		8070 R1	2.31475E-02	8071 T3	-1.44106E-02	8071 R1	1.62490E-02	8075 T3	-1.02153E-02
8075 R1	1.02450E-02		8072 T3	1.03745E-02	8072 R1	1.87099E-02	8074 T3	-2.32997E-02	8074 R1	1.39045E-02
8073 T3	-3.80876E-02		8073 R1	2.11043E-02	8039 T3	3.19211E-02	8061 T3	3.23502E-02	8064 T3	4.24882E-02
8066 T2	-2.51810E-02		8066 R3	1.05646E-02	8063 R3	1.49061E-02	8060 R3	1.16319E-02	8053 T2	-2.17510E-02
8203 R3	-1.79533E-02		8202 R3	-1.29092E-02	8205 R3	-1.77553E-02	8204 T2	2.19491E-02	8204 R3	-1.20707E-02
8206 T2	-2.34772E-02		8206 R3	-1.95594E-02	8207 T2	-2.27866E-02	8207 R3	-4.17025E-02	8191 T2	2.64841E-02
8191 R3	-2.99098E-02		8189 T2	4.16864E-02	8201 R3	-1.73609E-02	8200 R3	-1.29092E-02	8199 R3	-1.73609E-02
8198 T2	-2.27866E-02		8681 T2	2.37639E-02	8682 R1	-1.83044E-02	8121 T2	-3.87163E-02	2231 T2	1.52732E-02
8139 R1	1.80068E-02		8140 T2	4.18293E-02	5522 T2	-2.15883E-02	8100 T3	-1.81973E-02	8412 T3	-1.77656E-02
8412 R2	-1.23634E-02		8398 T3	1.77654E-02	8396 T3	1.51132E-02	8411 T3	-1.51132E-02	8392 T3	1.56721E-02
8410 T3	-1.56722E-02		8410 R2	-1.23918E-02	8409 T3	-1.56721E-02	8388 T3	1.56722E-02	8384 T3	1.56721E-02
8408 T3	-1.56722E-02		8408 R2	-1.23918E-02	8378 T3	1.56722E-02	8407 T3	-1.56721E-02	8371 T3	1.34364E-02
8406 T3	-1.34365E-02		8406 R2	-1.23284E-02	8405 T3	-1.56720E-02	8364 T3	1.56721E-02	8357 T3	1.56721E-02
8404 T3	-1.56721E-02		8404 R2	-1.22649E-02	8350 T3	1.56721E-02	8403 T3	-1.56720E-02	8342 T3	1.56721E-02
8402 T3	-1.56721E-02		8402 R2	-1.22649E-02	8336 T3	3.5579E-02	8401 T3	-3.35578E-02	8401 R1	1.05617E-02
8334 T3	3.35580E-02		8400 T3	-3.35580E-02	8400 R1	1.05616E-02	8400 R2	-1.17574E-02	8399 T3	2.41076E-02
10706 R3	-7.46095E-02		10660 T2	1.03582E-01	10660 R1	2.70417E-02	10660 T3	3.67681E-02	10661 T2	-1.04599E-01
10661 R1	-3.54153E-02		10691 T2	-2.80034E-01	10692 T2	2.90202E-02	10665 T2	-1.03434E-01	10665 R1	-2.80014E-02
10665 R3	3.75712E-02		10666 T2	1.03435E-01	10666 R1	3.44705E-02	10713 T2	2.16411E-02	10717 T2	-2.16411E-02
10714 T2	-2.16411E-02		10718 T2	2.16411E-02	7871 T2	-2.37639E-02	10670 T2	1.76203E-01	10670 R1	8.39874E-02
10670 R3	8.86926E-02		10671 T2	-1.76201E-01	10671 R1	-6.52971E-02	10723 R3	-1.76852E-01	10675 T2	-1.79890E-01
10675 R1	-8.29575E-02		10675 R3	8.88483E-01	10676 T2	1.79895E-01	10676 R1	6.63246E-02	10681 T2	-9.35206E-02
10681 R1	-2.51215E-02		10680 T2	1.02732E-01	10680 R1	3.53209E-02	10680 R3	4.70608E-02	10748 R1	-3.68590E-02
10751 T2	-2.81215E-01		10751 R1	-1.57414E-01	10751 R3	-5.33418E-02	10749 T2	3.11570E-01	10749 R1	4.79245E-02
10749 R3	1.67683E-01		10685 T2	-1.48444E-01	10685 R1	-4.52337E-02	10685 T2	-4.39428E-02	10686 T2	1.32609E-01
10686 R3	4.18619E-02		10781 T2	3.03453E-02	10782 T2	-3.03453E-02	9275 T2	-1.56640E-02	9341 T2	1.16297E-02
9924 T2	3.69104E-02		9886 R1	1.53392E-02	2826 T2	-3.76525E-02	8556 T3	-1.91229E-01	8556 R2	1.30052E-02
8555 T3	7.35915E-02		8555 R1	1.22153E-02	8555 R2	3.18522E-02	8489 T3	-5.72649E-02	8489 R2	1.01945E-02
8540 R1	1.36107E-02		8540 R2	1.25367E-02	8554 T3	-1.12278E-02	8554 R1	1.17360E-02	8554 R2	1.96732E-02
8553 T3	1.44092E-01		8553 R2	1.25453E-02	8308 T3	-2.44503E-02	8541 T3	3.55073E-02	8541 R1	1.01473E-02
8541 R2	1.23151E-02		8490 T3	-3.31440E-02	8496 T3	-2.06729E-02	8542 T3	1.83095E-02	8542 R1	1.01733E-02
8502 T3	-3.56569E-02		8543 T3	3.15904E-02	8543 R2	1.52297E-02	8331 T3	6.83245E-02	8544 T3	6.52084E-02
8544 R2	-1.74379E-02		8507 T3	-5.33916E-02	8545 T3	5.94116E-02	8545 R1	2.61901E-02	8545 R2	1.67970E-02
8512 T3	-4.99580E-02		8512 R1	-1.03969E-02	8901 T3	-1.12695E-02	8953 T3	1.84571E-02	8953 R1	1.64971E-02
8546 T3	2.97104E-02		8546 R1	2.87418E-02	8546 R2	1.16743E-02	8517 T3	-2.97106E-02	8517 R1	-1.47369E-02
8952 T3	-2.28361E-02		8952 R1	1.62441E-02	8905 T3	1.56479E-02	8547 T3	2.97105E-02	8547 R1	3.17245E-02
8547 R2	1.6743E-02		8520 T3	-2.97103E-02	8520 R1	-1.31400E-02	8951 T3	-2.28361E-02	8909 T3	1.56479E-02
8548 T3	3.00222E-02		8548 R1	2.47719E-02	8548 R2	1.74302E-02	8524 T3	-3.81554E-02	8524 R1	-1.15854E-02
8549 T3	6.12679E-02		8549 R1	2.50933E-02	8549 R2	1.71172E-02	8528 T3	-5.12235E-02	8528 R1	-1.29315E-02
8532 T3	-2.46416E-02		8532 R1	-1.18647E-02	8550 T3	2.74934E-02	8550 R1	3.44587E-02	8550 R2	1.10591E-02

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FEBRUARY

METSAT

5 FOUTL.TB CHECK -

AFTER 126

TA TRAN'S

STEFAN DAS

TABLE

POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE
8551 R1	1.95645E-02	8551 R2	1.16879E-02	8536 T3	-1.94688E-02	8536 R1	-1.05620E-02	8536 T3	-1.05620E-02	8536 R1	-1.05620E-02	8536 T3	1.59379E-01	8536 R1	1.59379E-01
8946 T3	-4.39577E-02	8959 R1	-2.24662E-02	8929 T3	-1.18351E-02	8961 T3	3.98548E-02	8929 T3	3.98548E-02	8961 T3	3.98548E-02	8929 T3	-2.11365E-01	8961 T3	-2.11365E-01
9292 T3	1.72690E-02	9297 T3	1.72690E-02	9303 T3	-6.78534E-02	9308 T3	-2.88713E-02	9303 T3	-2.88713E-02	9308 T3	-2.88713E-02	9303 T3	-1.98560E-01	9308 T3	-1.98560E-01
9323 T3	-1.25458E-02	9324 T3	2.05647E-02	9328 T3	-2.19033E-02	9333 T3	-2.76710E-02	9328 T3	-2.76710E-02	9333 T3	-2.76710E-02	9328 T3	1.30481E-01	9333 T3	1.30481E-01
9249 T3	-1.29650E-02	9582 T3	-1.29033E-02	9584 T3	1.56591E-02	9589 T3	-2.53702E-02	9584 T3	-2.53702E-02	9589 T3	-2.53702E-02	9584 T3	4.11235E-01	9589 T3	4.11235E-01
9592 T3	-1.59660E-02	9593 T3	1.91937E-02	9596 T3	-1.83942E-02	9596 R1	1.06665E-02	9596 T3	1.06665E-02	9596 R1	1.06665E-02	9596 T3	2.42913E-01	9596 R1	2.42913E-01
9599 T3	1.64430E-02	9601 R2	1.11474E-02	9602 T3	4.13144E-02	9602 R1	-1.13819E-02	9602 T3	-1.13819E-02	9602 R1	-1.13819E-02	9602 T3	1.70566E-01	9602 R1	1.70566E-01
9605 T3	2.49251E-02	9607 R1	2.21717E-02	9610 T3	-4.04300E-02	9611 T3	4.25944E-02	9610 T3	4.25944E-02	9611 T3	4.25944E-02	9610 T3	-1.01530E-01	9611 T3	-1.01530E-01
9613 T3	-2.81412E-02	9614 T3	2.20593E-02	9616 T3	-2.06740E-02	9616 R2	1.08784E-02	9616 T3	1.08784E-02	9616 R2	1.08784E-02	9616 T3	4.09404E-01	9616 R2	4.09404E-01
9619 R2	1.08581E-02	9620 T3	4.30048E-02	9622 T3	1.18449E-02	9622 R1	1.47029E-02	9622 T3	1.47029E-02	9622 R1	1.47029E-02	9622 T3	-2.48932E-01	9622 R1	-2.48932E-01
9625 T3	-1.87895E-02	11812 T2	-2.37368E-02	11812 R3	3.52154E-01	2009 T2	1.28797E-02	11812 R3	3.52154E-01	2009 T2	1.28797E-02	11812 R3	-2.23692E-01	2009 T2	-2.23692E-01
2953 T2	1.11654E-02	5511 T2	-2.0972E-02	5511 R3	2.07200E-02	5512 R3	2.70713E-02	5511 R3	2.07200E-02	5512 R3	2.70713E-02	5511 R3	1.47497E-01	5512 R3	1.47497E-01
5513 R3	2.75002E-02	2960 R3	-1.57683E-02	5514 R3	2.74637E-02	2959 R3	1.67951E-02	5514 R3	2.74637E-02	2959 R3	1.67951E-02	5514 R3	-1.14591E-01	2959 R3	-1.14591E-01
5515 R3	2.43711E-02	2958 R3	-1.36213E-02	5516 T2	1.30133E-02	5516 R3	1.0260E-02	5516 T2	1.30133E-02	5516 R3	1.0260E-02	5516 T2	-2.33383E-01	5516 R3	-2.33383E-01
5517 R3	1.37293E-02	5518 R3	1.37458E-02	5519 R3	1.35386E-02	4718 T2	3.05955E-02	5519 R3	1.35386E-02	4718 T2	3.05955E-02	5519 R3	-6.71053E-01	4718 T2	-6.71053E-01
5508 T2	1.74885E-02	3733 T2	1.91973E-02	3737 T3	-5.86642E-02	3727 T1	1.10843E-02	3733 T2	-5.86642E-02	3727 T1	1.10843E-02	3733 T2	3.0393E-01	3727 T1	3.0393E-01
3721 T2	-1.91974E-02	3721 T3	-5.3924E-02	3727 T1	1.10843E-02	3727 T1	1.10843E-02	3727 T1	1.10843E-02	3727 T1	1.10843E-02	3727 T1	-3.31954E-01	3727 T1	-3.31954E-01
4703 T2	-3.35952E-02	4703 T3	-6.63908E-02	3739 T2	-6.63908E-02	4816 T2	1.67977E-02	4703 T3	-6.63908E-02	4816 T2	1.67977E-02	4703 T3	-1.67977E-01	4816 T2	-1.67977E-01
3744 T3	7.83747E-02	4830 T													

COLUMN	3029	3028	3027	3026	3025	3024	3023	3022	3021	3020	3019	3018	3017	3016	3015	3014	3013	3012	3011	3010	3009	3008	3007	3006	3005	3004	3003	3002	3001	3000	2999	2998	2997	2996	2995	2994	2993	2992	2991	2990	2989	2988	2987	2986	2985	2984	2983	2982	2981	2980	2979	2978	2977	2976	2975	2974	2973	2972	2971	2970	2969	2968	2967	2966	2965	2964	2963	2962	2961	2960	2959	2958	2957	2956	2955	2954	2953	2952	2951	2950	2949	2948	2947	2946	2945	2944	2943	2942	2941	2940	2939	2938	2937	2936	2935	2934	2933	2932	2931	2930	2929	2928	2927	2926	2925	2924	2923	2922	2921	2920	2919	2918	2917	2916	2915	2914	2913	2912	2911	2910	2909	2908	2907	2906	2905	2904	2903	2902	2901	2900	2899	2898	2897	2896	2895	2894	2893	2892	2891	2890	2889	2888	2887	2886	2885	2884	2883	2882	2881	2880	2879	2878	2877	2876	2875	2874	2873	2872	2871	2870	2869	2868	2867	2866	2865	2864	2863	2862	2861	2860	2859	2858	2857	2856	2855	2854	2853	2852	2851	2850	2849	2848	2847	2846	2845	2844	2843	2842	2841	2840	2839	2838	2837	2836	2835	2834	2833	2832	2831	2830	2829	2828	2827	2826	2825	2824	2823	2822	2821	2820	2819	2818	2817	2816	2815	2814	2813	2812	2811	2810	2809	2808	2807	2806	2805	2804	2803	2802	2801	2800	2799	2798	2797	2796	2795	2794	2793	2792	2791	2790	2789	2788	2787	2786	2785	2784	2783	2782	2781	2780	2779	2778	2777	2776	2775	2774	2773	2772	2771	2770	2769	2768	2767	2766	2765	2764	2763	2762	2761	2760	2759	2758	2757	2756	2755	2754	2753	2752	2751	2750	2749	2748	2747	2746	2745	2744	2743	2742	2741	2740	2739	2738	2737	2736	2735	2734	2733	2732	2731	2730	2729	2728	2727	2726	2725	2724	2723	2722	2721	2720	2719	2718	2717	2716	2715	2714	2713	2712	2711	2710	2709	2708	2707	2706	2705	2704	2703	2702	2701	2700	2699	2698	2697	2696	2695	2694	2693	2692	2691	2690	2689	2688	2687	2686	2685	2684	2683	2682	2681	2680	2679	2678	2677	2676	2675	2674	2673	2672	2671	2670	2669	2668	2667	2666	2665	2664	2663	2662	2661	2660	2659	2658	2657	2656	2655	2654	2653	2652	2651	2650	2649	2648	2647	2646	2645	2644	2643	2642	2641	2640	2639	2638	2637	2636	2635	2634	2633	2632	2631	2630	2629	2628	2627	2626	2625	2624	2623	2622	2621	2620	2619	2618	2617	2616	2615	2614	2613	2612	2611	2610	2609	2608	2607	2606	2605	2604	2603	2602	2601	2600	2599	2598	2597	2596	2595	2594	2593	2592	2591	2590	2589	2588	2587	2586	2585	2584	2583	2582	2581	2580	2579	2578	2577	2576
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POINT	KFFR	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE
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8293 R3	1.94888E-02		8292 T2	1.81947E-02	8291 T2	-3.88473E-02	8289 T2	1.50369E-02	8289 R3	2.27213E-02
8285 T2	1.64763E-02		8280 T2	1.85004E-02	8281 R1	1.71422E-02	8281 R3	1.16752E-02	8282 R1	1.15154E-02
8279 T2	-3.29598E-02		8274 T2	1.45184E-02	8274 R3	-1.00737E-02	8275 R3	1.68683E-02	8273 T2	-1.68695E-02
8271 R1	1.57982E-02		8270 R1	2.14347E-02	8269 T2	1.92354E-02	8269 R3	1.68855E-02	8268 R3	-1.03079E-02
8267 T2	1.00318E-02		8264 R1	1.63971E-02	8263 R1	2.08405E-02	8263 R3	2.93858E-02	8262 T2	2.18716E-02
8262 R3	-1.08336E-02		8257 R3	1.69959E-02	8254 T2	-1.15894E-02	8253 T3	-1.54747E-02	8185 T3	-7.66028E-02
8185 R2	-1.69037E-02		8164 T3	4.53143E-02	8169 T3	3.12885E-02	8479 T3	-3.46680E-02	8478 T3	-2.92431E-02
8478 R2	-1.34136E-02		8476 T3	1.02737E-02	8476 R2	-1.32333E-02	8474 T3	3.58968E-02	8475 T3	1.29931E-02
8471 T3	2.43130E-02		8470 T3	-2.45924E-02	8469 T3	-1.81060E-02	8462 T3	1.69608E-02	8459 T3	1.06597E-02
8455 T3	1.28555E-02		8441 T3	1.16478E-02	8437 R2	1.28256E-02	8435 T3	-2.53603E-02	8432 T3	-2.94525E-02
8431 T3	-1.30694E-02		8430 T3	1.22553E-02	8428 T3	-2.92576E-02	8429 T3	1.59638E-02	8427 T3	-1.10583E-02
8425 R1	-1.13332E-02		8423 T3	-1.30260E-02	8422 T3	1.33747E-02	8419 T3	-2.32303E-02	8418 T3	1.80688E-02
8414 R2	-1.13970E-02		8556 T3	8.22596E-02	8555 T3	-3.16563E-02	8555 R2	-1.37016E-02	8489 T3	2.46332E-02
8553 T3	-6.19830E-02		8308 T3	1.05176E-02	8541 T3	1.52733E-02	8490 T3	1.42573E-02	8502 T3	1.53383E-02
8543 T3	-1.35890E-02		8331 T3	-2.93906E-02	8544 T3	-2.80502E-02	8507 T3	2.29671E-02	8545 T3	-2.55566E-02
8545 R1	-1.12660E-02		8512 T3	2.14901E-02	8546 T3	-1.27803E-02	8546 R1	-1.23636E-02	8517 T3	1.27804E-02
8547 T3	-1.27804E-02		8549 T3	-1.36467E-02	8520 T3	-1.27803E-02	8548 T3	-1.23636E-02	8517 T3	1.27804E-02
8524 T3	1.64130E-02		8549 T3	-2.63552E-02	8520 T3	-1.27803E-02	8528 T3	2.20345E-02	8532 T3	1.05999E-02
8550 T3	-1.18266E-02		8550 R1	-1.48229E-02	8946 T3	1.89089E-02	8961 T3	-1.71440E-02	9247 T3	1.56409E-02
9303 T3	3.54018E-02		9308 T3	1.50633E-02	9319 T3	1.03597E-02	9324 T3	-1.07294E-02	9328 T3	1.14278E-02
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9602 T3	-2.15553E-02		9605 T3	-1.30044E-02	9607 R1	-1.15678E-02	9610 T3	-2.13602E-02	9611 T3	-2.22232E-02
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9623 T3	1.29877E-02		8830 T3	-2.47215E-02	8829 R2	-1.39349E-02	8828 T3	2.47216E-02	9627 T3	-2.37850E-02
8722 T3	2.37850E-02		8830 T3	1.32164E-02	8707 T3	-1.32164E-02	3672 T3	-2.46220E-02	5539 T3	1.85347E-02
3847 T3	-1.21990E-02		3847 R1	-1.45793E-02	3869 R1	1.49058E-02	3834 T3	1.23669E-02	3834 R1	-1.04679E-02
3882 R1	1.11316E-02		3671 T3	1.22531E-02	3833 T3	1.22011E-02	3790 T3	-1.18242E-02	3759 T3	1.20185E-02
3788 T3	1.06552E-02		3638 R1	1.02498E-02	1511 R1	-1.31340E-02	3632 R1	1.34532E-02	1512 R1	-1.32146E-02
3626 R1	1.35781E-02		3620 T3	-1.05536E-02	3620 R1	1.17712E-02	3452 T3	1.78575E-02	1472 R1	1.32146E-02
1471 R1	1.25292E-02		3457 T3	-1.78575E-02	3625 T3	1.05536E-02	3625 R1	-1.17712E-02	3631 R1	-1.35781E-02
3637 R1	-1.29160E-02		3643 R1	-1.03287E-02	2949 T3	-1.28629E-02	2970 T3	1.02102E-02	2952 T3	1.00558E-02
2969 T3	-4.43300E-02		2969 R2	-1.09317E-02	2968 T3	2.60670E-02	2968 R1	-1.71141E-02	2968 R2	-2.51714E-02
2959 T3	-1.80178E-02		2967 T3	1.93598E-02	2967 R2	-1.33452E-02	2958 T3	-3.56672E-02	2966 R1	1.32205E-02
2957 T3	-1.47566E-02		2956 T3	3.14024E-02	2964 T3	-2.69233E-02	2964 R2	-1.09335E-02	2963 T3	-5.49578E-02
2963 R1	1.72115E-02		2963 R2	-3.24335E-02	2951 T3	-1.47455E-02	2962 T3	6.00111E-02	2962 R1	1.30676E-02
2962 R2	-1.94484E-02		2950 T3	-1.01896E-02	2554 T3	1.01896E-02	3757 T3	-1.20186E-02	3004 R2	1.25410E-02
3005 R2	1.43593E-02		3006 R2	1.08116E-02	3007 T3	1.30056E-02	3008 T3	-2.22144E-02	3001 T3	-1.18551E-02
4966 T3	1.28512E-02		4967 R2	-1.38073E-02	4968 R2	-1.43314E-02	4969 T3	-1.03222E-02	4970 T3	-1.01004E-02
4965 T3	1.48760E-02		5039 T3	3.56289E-02	5104 T3	1.43314E-02	5117 T3	-3.10734E-02	5117 R1	1.72457E-02
5117 R2	2.48284E-02		5130 R1	1.36506E-02	5130 R2	3.96243E-02	5145 R2	3.79706E-02	5160 T3	2.98297E-02
5160 R2	2.94745E-02		5171 T3	3.24315E-02	5178 T3	3.20704E-02	5180 R1	1.85440E-02	5180 R2	-1.30018E-02
5181 T3	-3.15561E-02		5067 T3	-3.50065E-02	5052 R1	1.16948E-02	5052 R2	-1.61649E-02	2948 T3	-3.66167E-02
2946 T3	3.47021E-02		11648 T3	-2.04348E-02	2944 T3	-2.28014E-02	2943 T3	4.91049E-02	2942 T3	2.32512E-02
2941 T3	-2.69237E-02									

LARGE FIELD DATA TRANS ALTER 126 EQUILIB CHECK - METSAT

FEBRUARY 27, 1986 MSC/NASTRAN 8/24/94 PAGE 164

POINT	KFFRN	VALUE		POINT		VALUE		POINT		VALUE	
		VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT	VALUE	POINT
COLUMN	1 (	4003-T1).									
COLUMN	2 (	4003-T2).									
COLUMN	3 (	4003-T3).									
COLUMN	4 (	4003-R1).									
COLUMN	5 (	4003-R2).									
COLUMN	6 (	4003-R3).									

APPENDIX C

DESIGN LOAD CASES 1 THRU 8

CONTOUR & STRESS PLOTS

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Time: 15:54:15
Date: 02/28/96

Contour
Node Scalar1

Color Index

—	0	0.675E+03
—	9	0.602E+03
—	8	0.529E+03
—	7	0.456E+03
—	6	0.383E+03
—	5	0.309E+03
—	4	0.236E+03
—	3	0.163E+03
—	2	0.902E+02
—	1	0.171E+02

Min = 1.706977E+01

Max = 7.480167E+02

Min ID= 1196

Max ID= 1179

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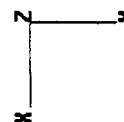
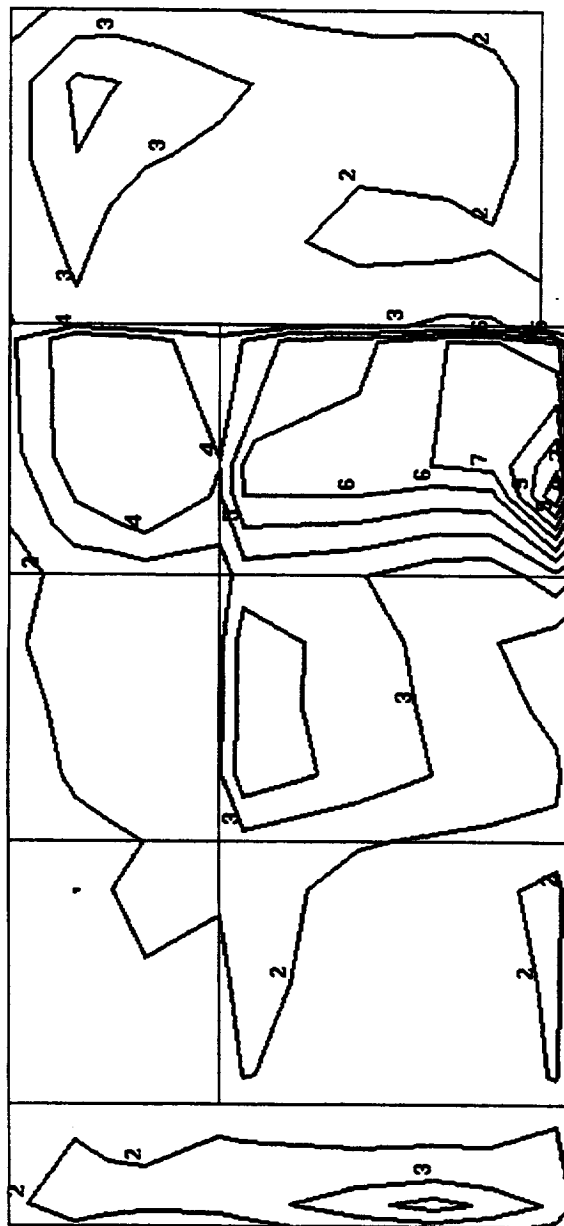
Stress Tensor

Von Mises

At Z1

Design_Oy=-20.6_Ox=-21.2
Static Subcase

Metsat AMSU-A1
Lower Baseplate



Time: 15:55:43
Date: 02/28/96

Contour
Node Scalar1

Color Index

—	0	0.500E+03
—	9	0.518E+03
—	8	0.456E+03
—	7	0.394E+03
—	6	0.332E+03
—	5	0.270E+03
—	4	0.208E+03
—	3	0.146E+03
—	2	0.843E+02
—	1	0.223E+02

Min = 2.232490E+01

Max = 6.416785E+02

Min ID= 1196

Max ID= 1179

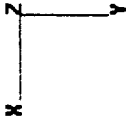
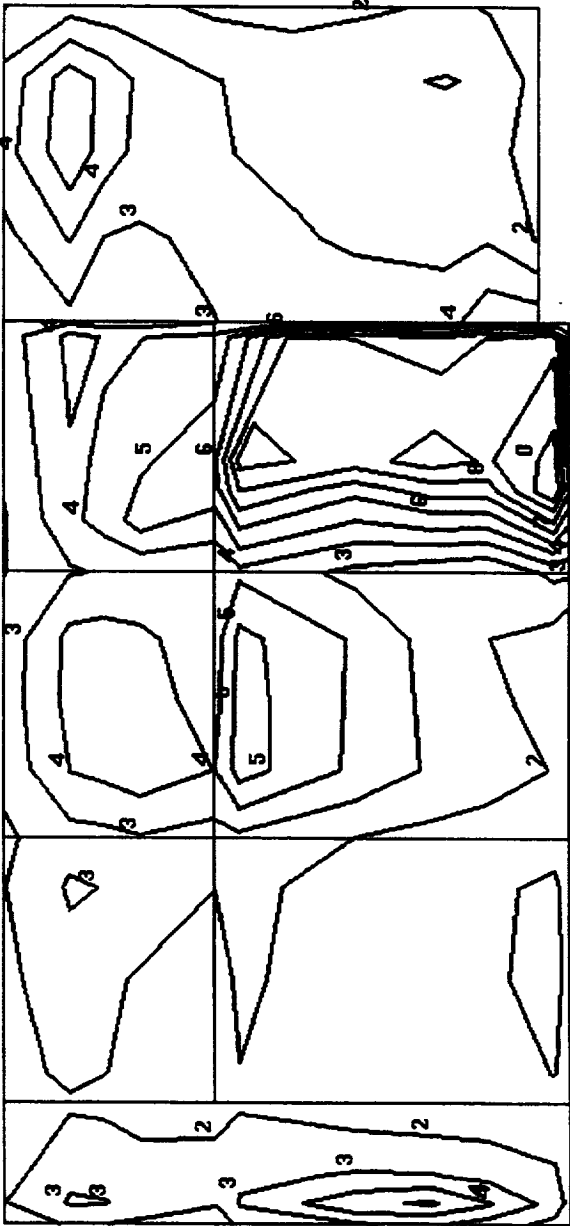
Contour_2:

Stress Tensor

von Mises
At 22

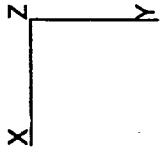
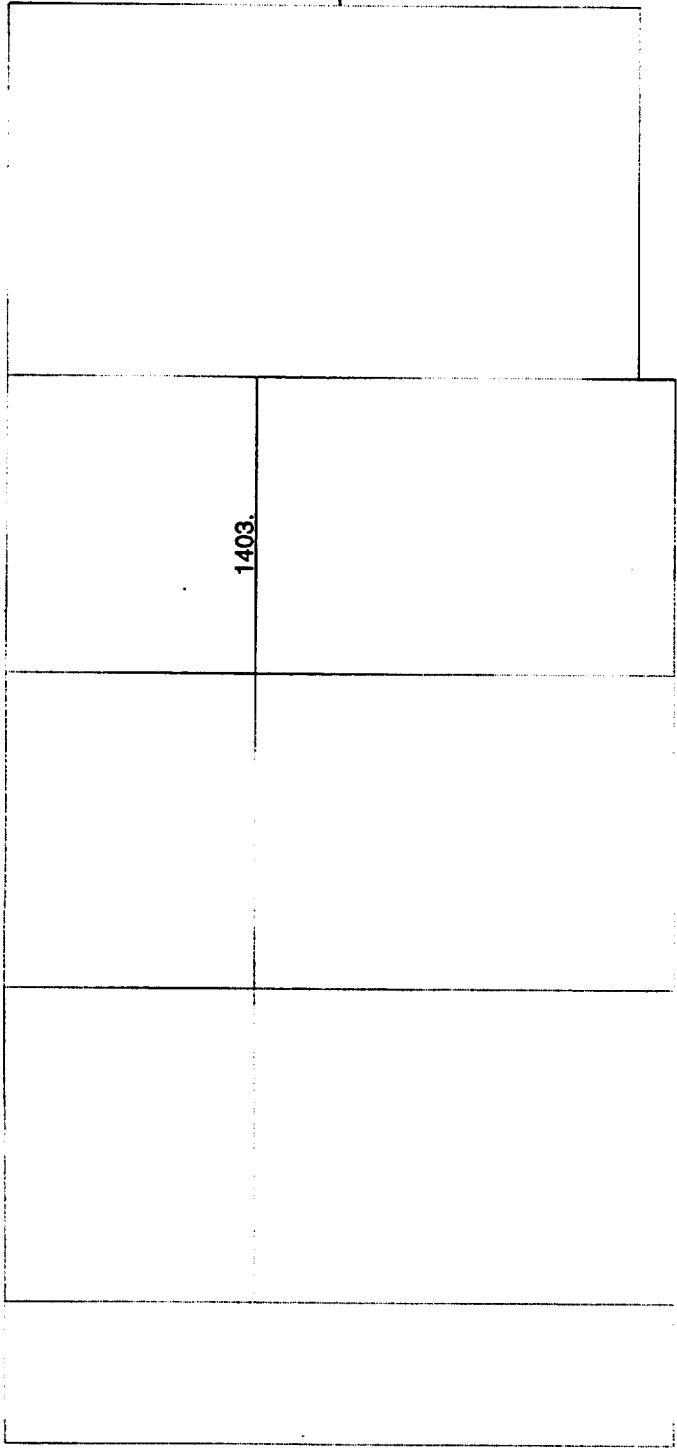
Design_Gyr=20.6_Gx=-21.2
Static Subcase

Metsat AMSU-A1
Lower Baseplate



FRINGE PLOT LC=16.307 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:48:52

Lower Baseplate Beams

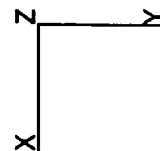
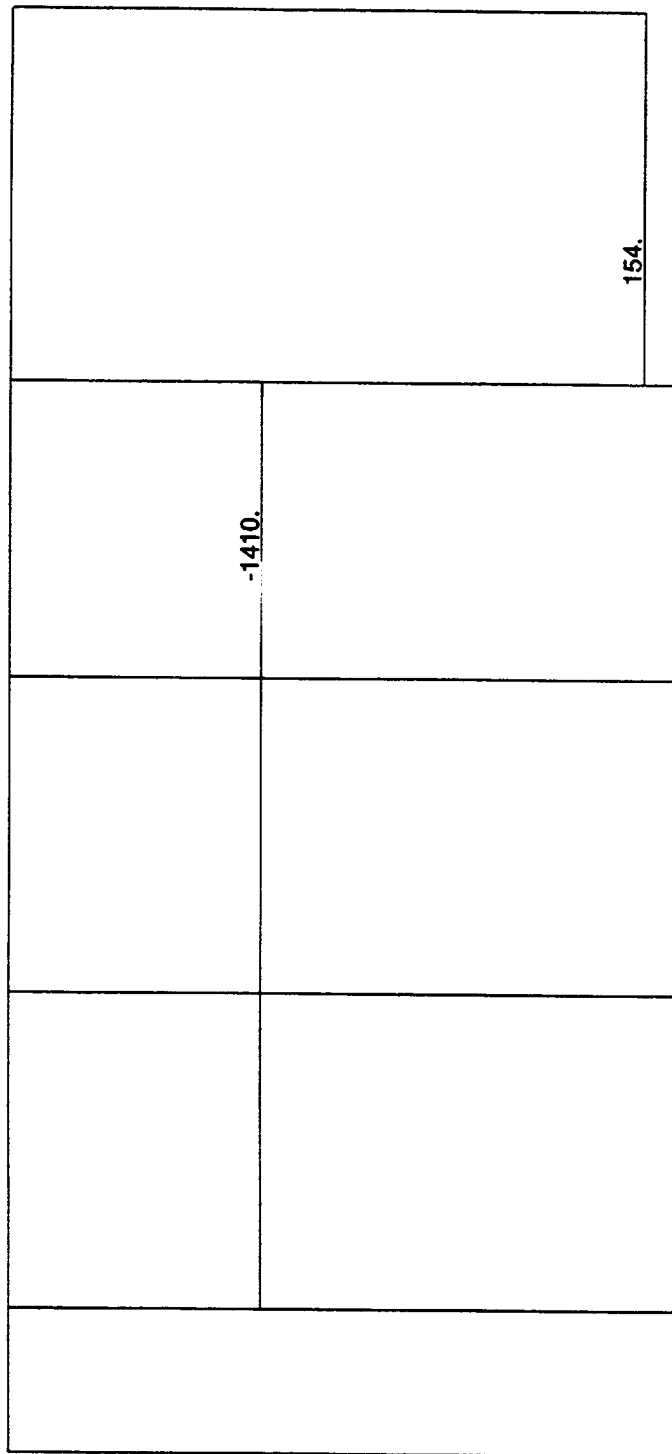


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

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1304.
1206.
1107.
1009.
910.
812.
713.
615.
516.
417.
319.
220.
122.
23.
-75.

FRINGE PLOT LC=16.307 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:49:03

Lower Baseplate Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

Time: 16:37:05
Date: 02/28/96

Contour
Node Scalar1

Color Index

—	0	0.305E+04
—	9	0.272E+04
—	8	0.240E+04
—	7	0.207E+04
—	6	0.174E+04
—	5	0.142E+04
—	4	0.109E+04
—	3	0.764E+03
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—	1	0.110E+03

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Max = 3.378195E+03

Min ID= 1039

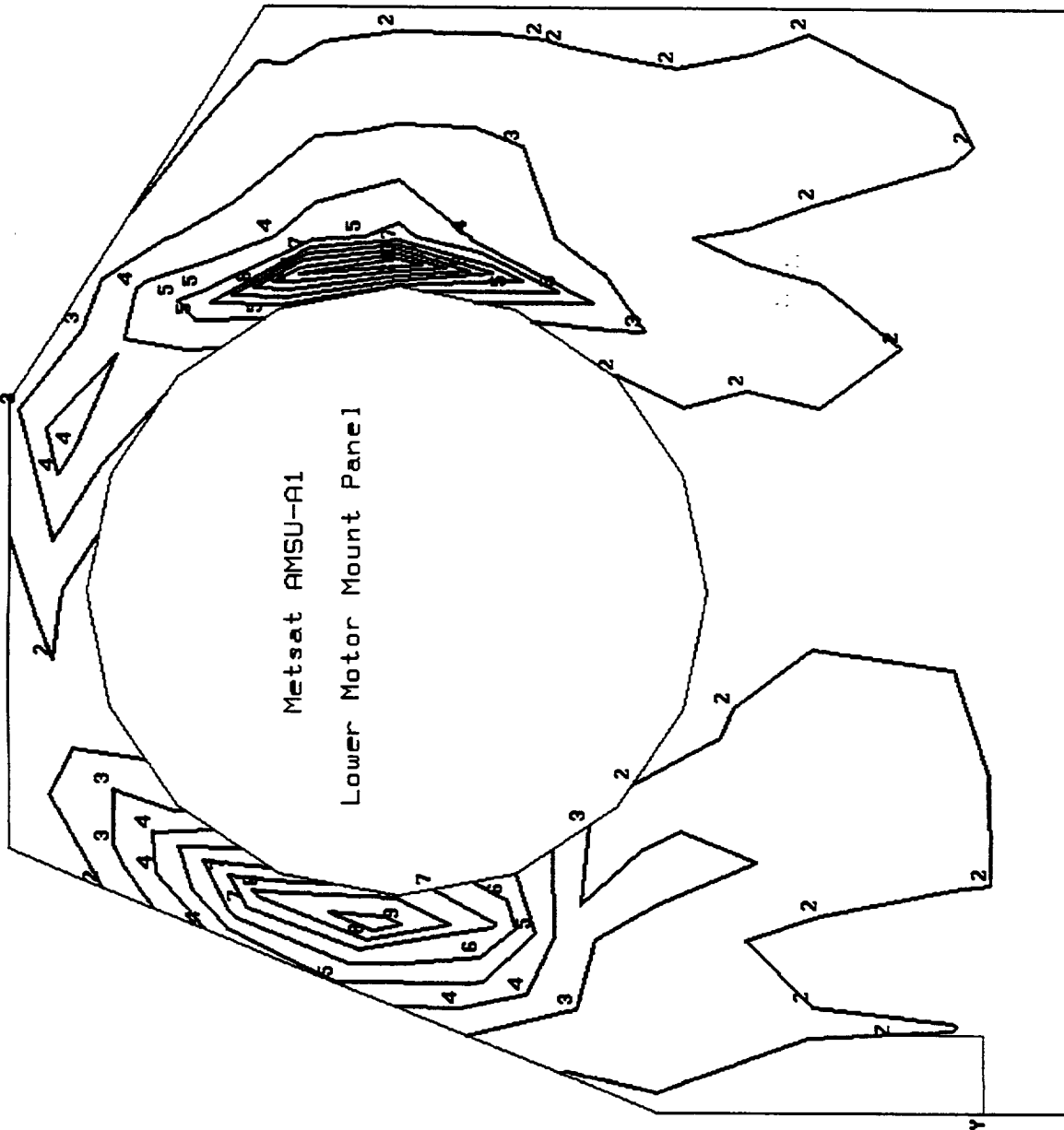
Max ID= 2880

Contour_3:

Stress Tensor

Von Mises
At 21

Design_Gy=-20.6_Gx=-21.2
Static Subcase



Time: 16:38:22
Date: 02/28/96

Contour
Node Scalar1

Color Index

—	0	0.319E+04
—	9	0.285E+04
—	8	0.250E+04
—	7	0.216E+04
—	6	0.181E+04
—	5	0.147E+04
—	4	0.112E+04
—	3	0.778E+03
—	2	0.433E+03
—	1	0.886E+02

Min = 8.858730E+01

Max = 3.534532E+03

Min ID= 1172

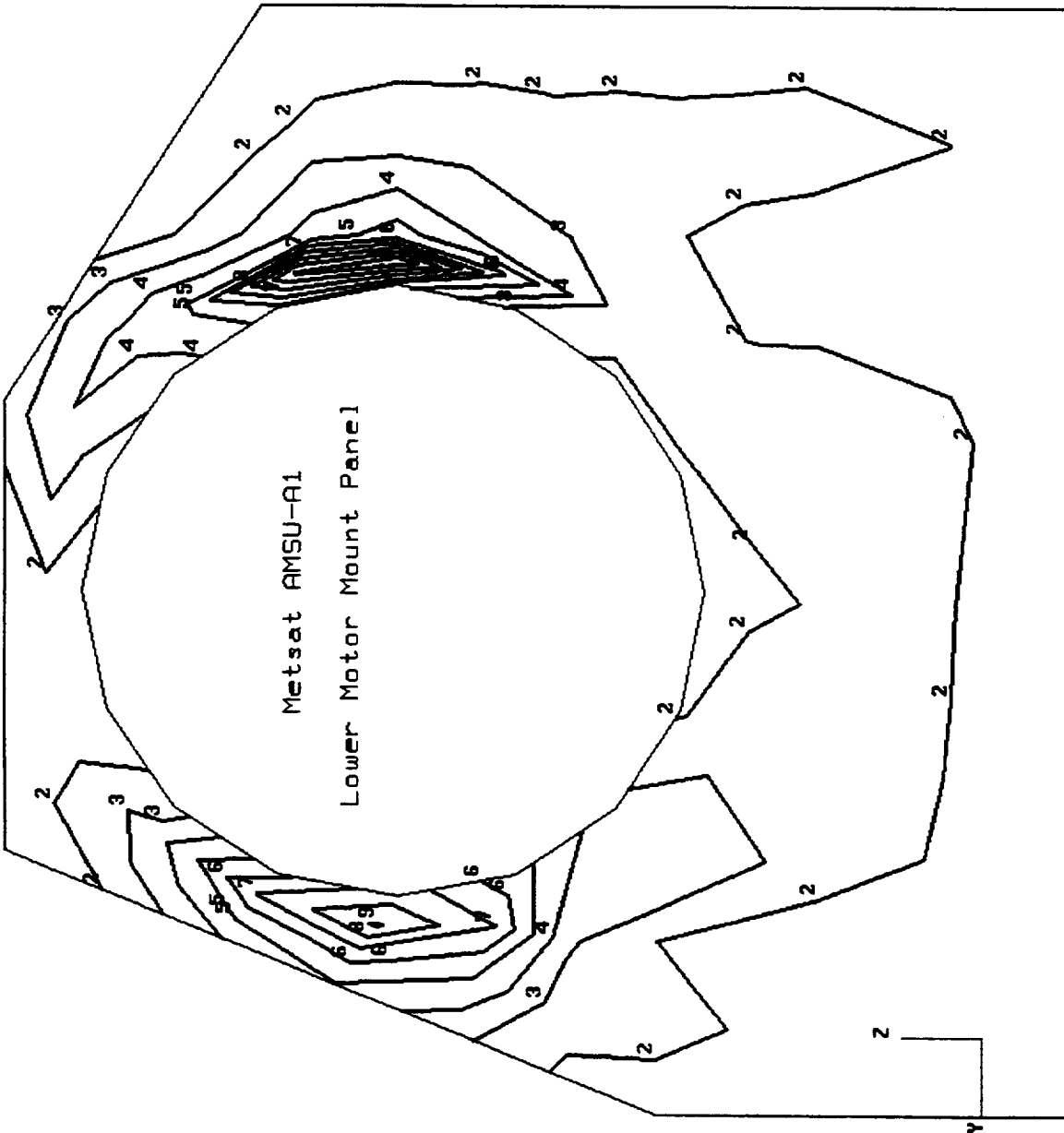
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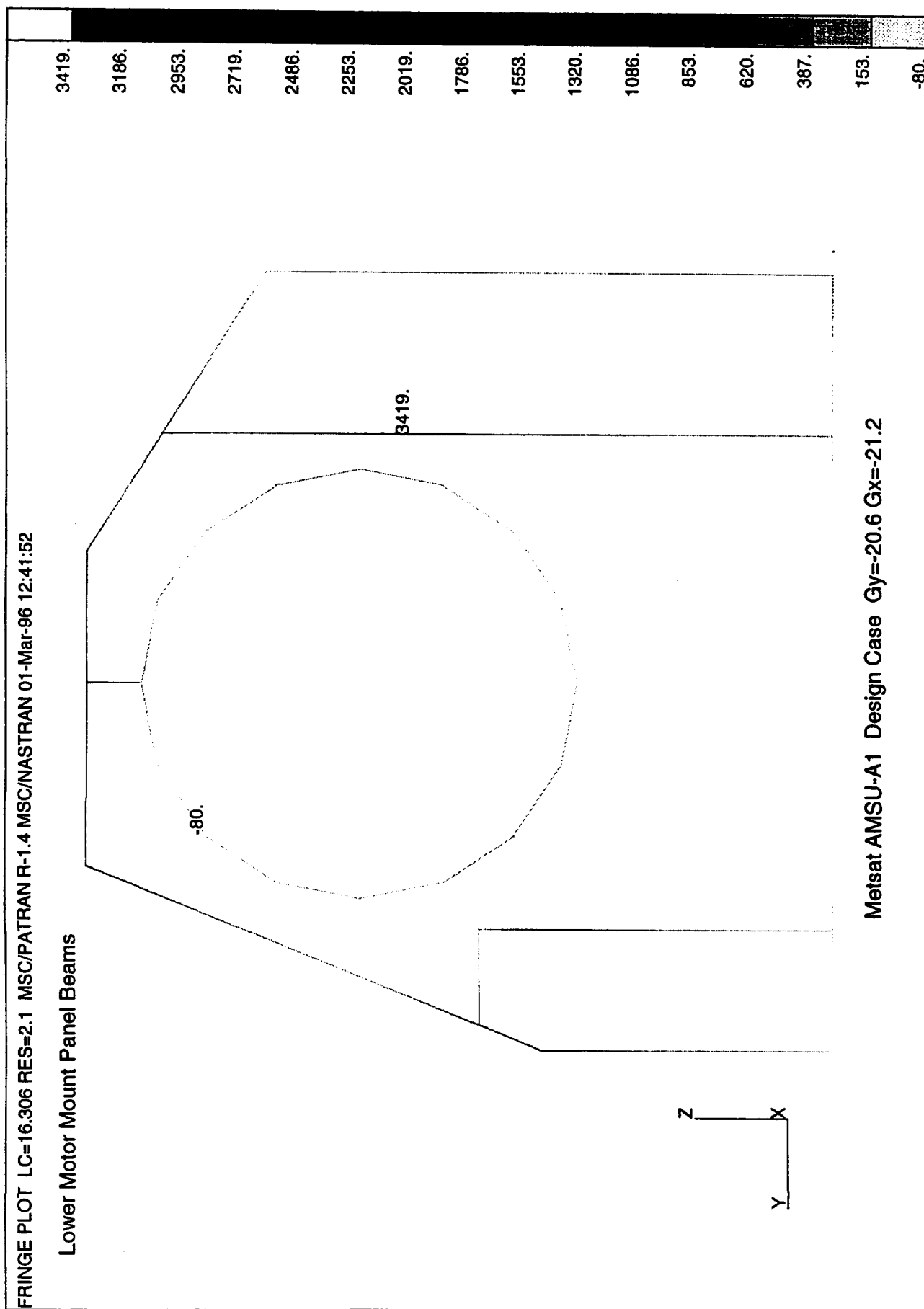
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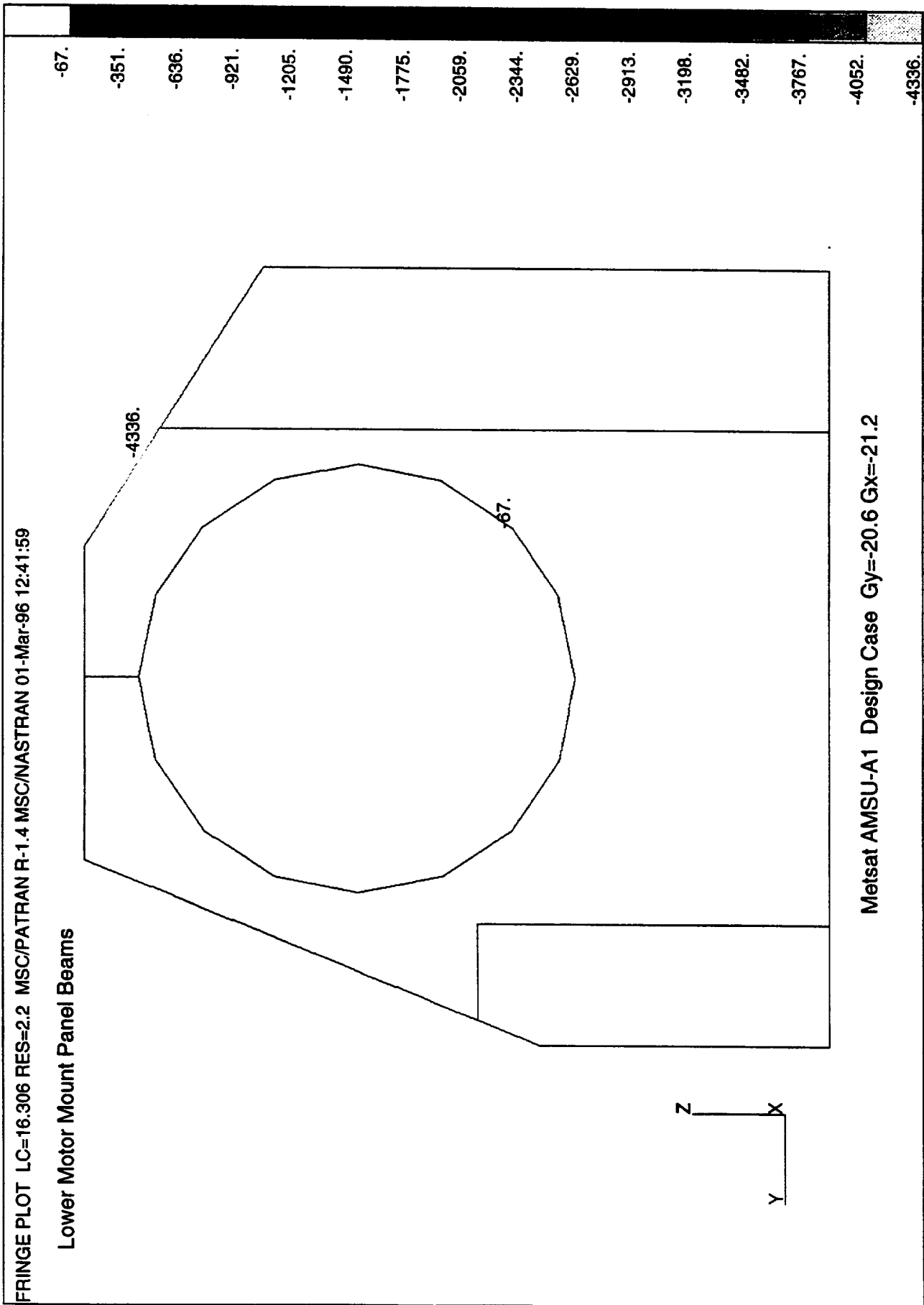
Stress Tensor

Von Mises
At 22

Design_Qy=-20.6_0x=-21.2
Static Subcase







Time: 16:40:49
Date: 02/28/96

Contour
Node Scalar1

Color Index

—	0	0.175E+04
—	9	0.156E+04
—	8	0.137E+04
—	7	0.118E+04
—	6	0.990E+03
—	5	0.801E+03
—	4	0.612E+03
—	3	0.423E+03
—	2	0.234E+03
—	1	0.456E+02

Min = 4.557435E+01

Max = 1.934350E+03

Min ID= 1569

Max ID= 2773

Contour_3:

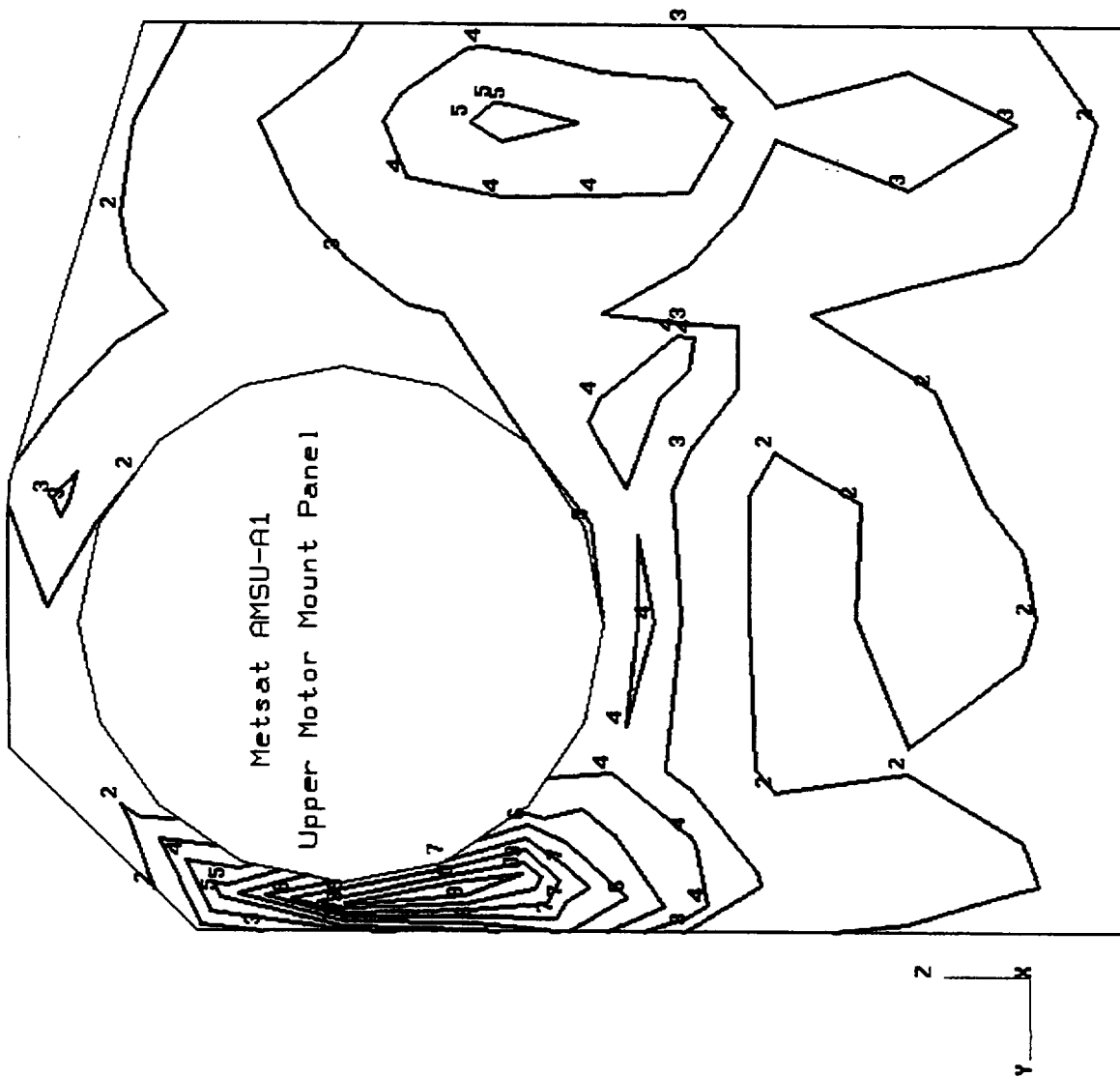
Stress Tensor

Von Mises

At Z1

Design_0y=-20.6_0x=-21.2

Static Subcase



Time: 16:39:52
Date: 02/28/96

Contour
Node Scalar1

Color Index

0	0.180E+04
9	0.160E+04
8	0.141E+04
7	0.121E+04
6	0.101E+04
5	0.812E+03
4	0.614E+03
3	0.416E+03
2	0.219E+03
1	0.206E+02

Min = 2.061415E+01

Max = 2.000010E+03

Min ID= 1569

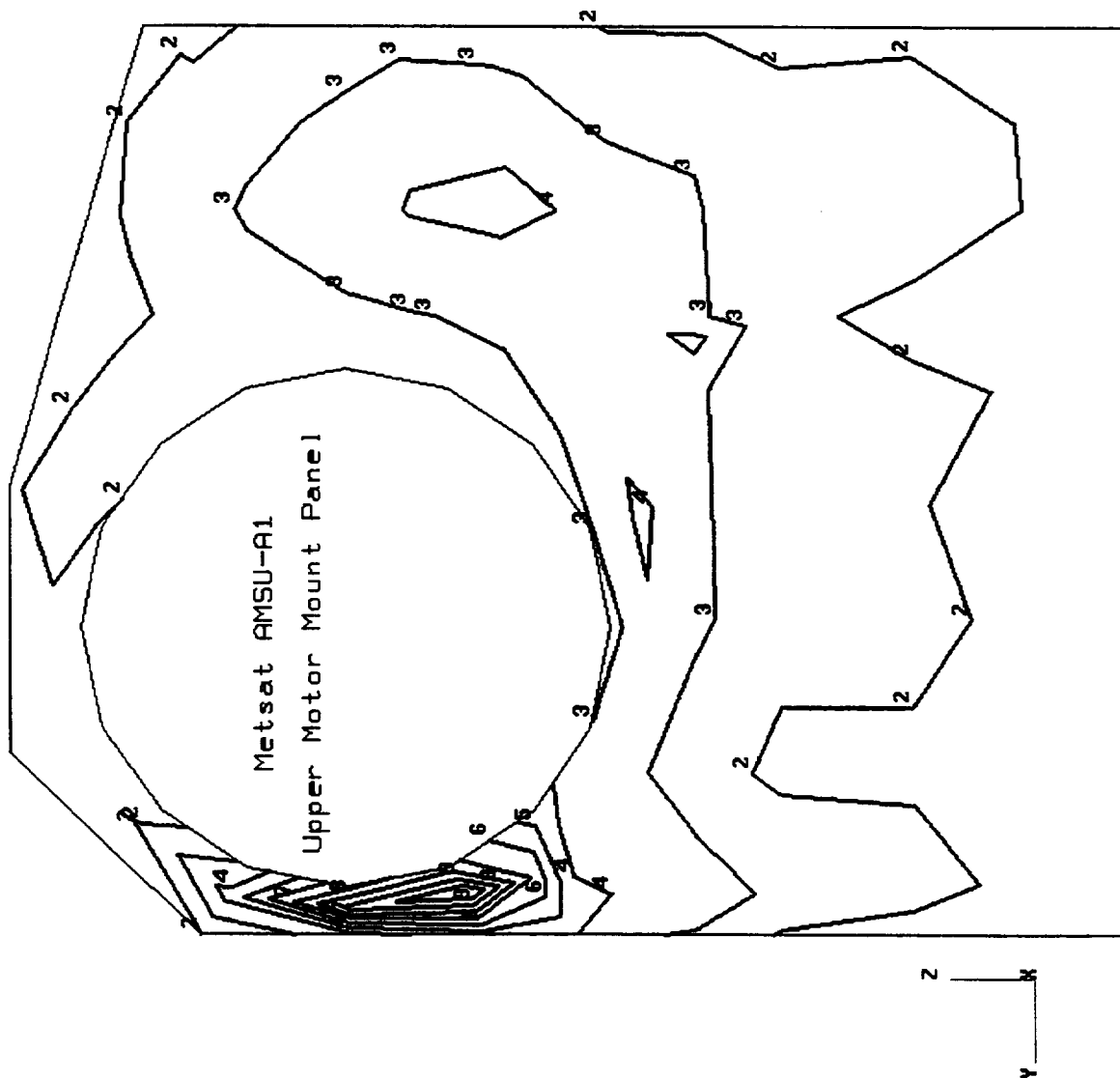
Max ID= 2773

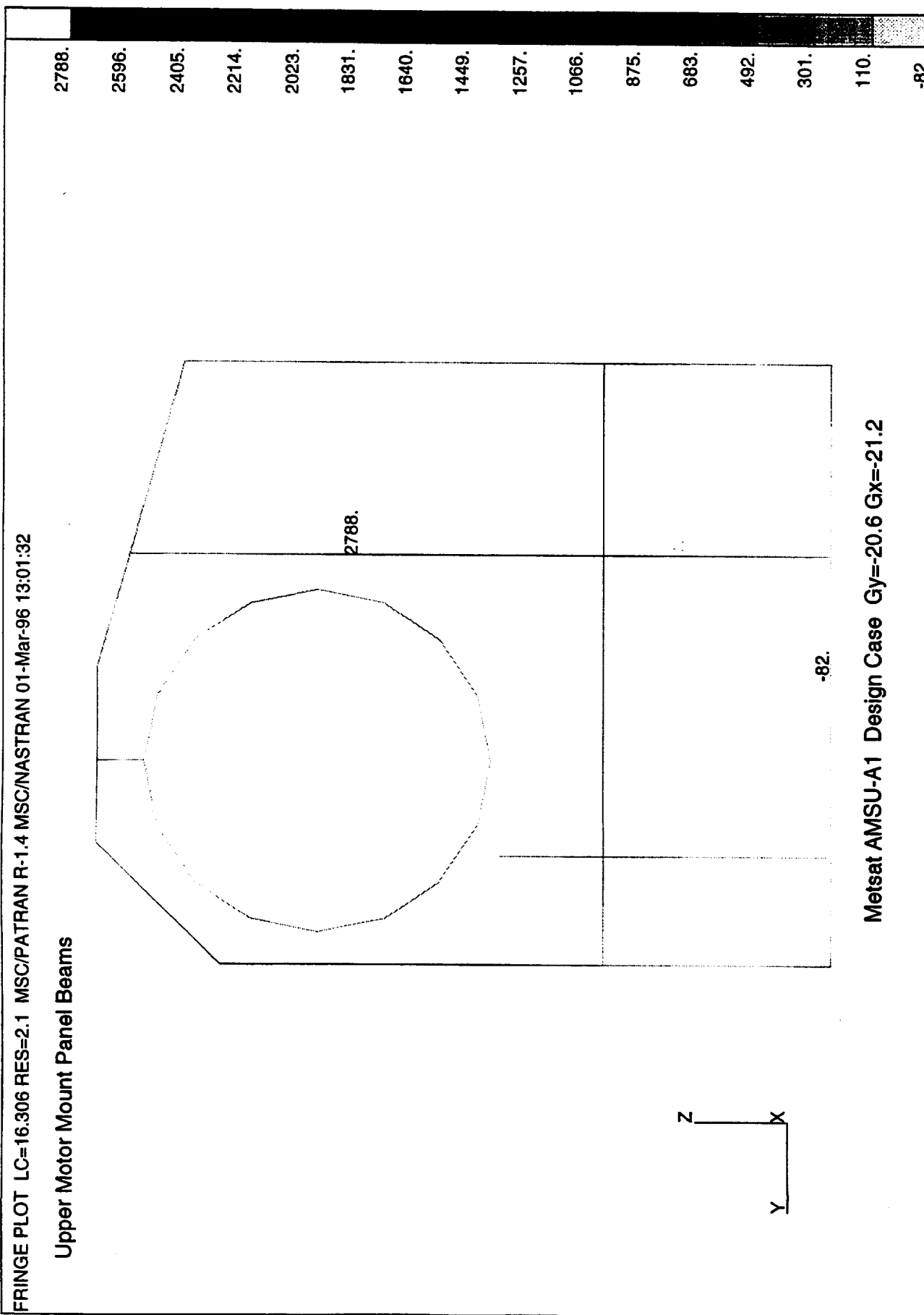
Contour_4:

Stress Tensor

Von Mises
At 22

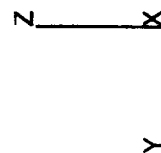
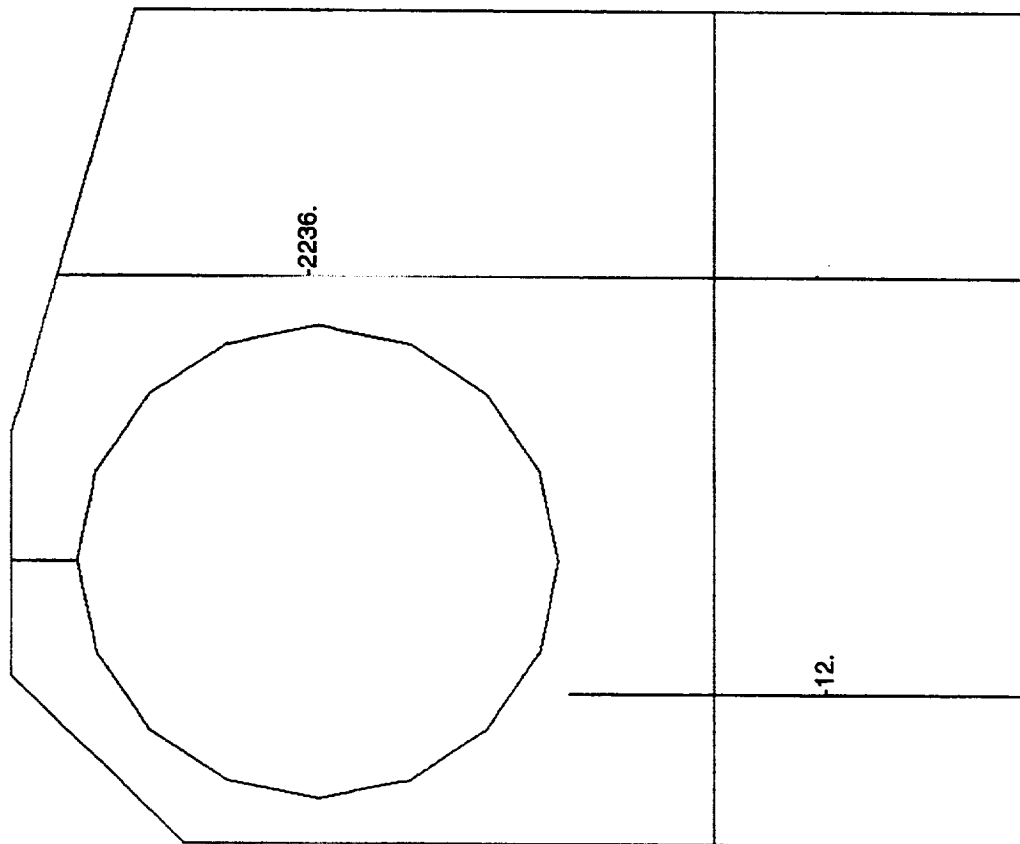
Design_Qy=-20.6_Qx=-21.2
Static Subcase





FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:01:38

Upper Motor Mount Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

Metsat AMSU-A1 Lower Front Panel

Time: 16:35:27
Date: 02/28/96

Contour
Node Scalar1

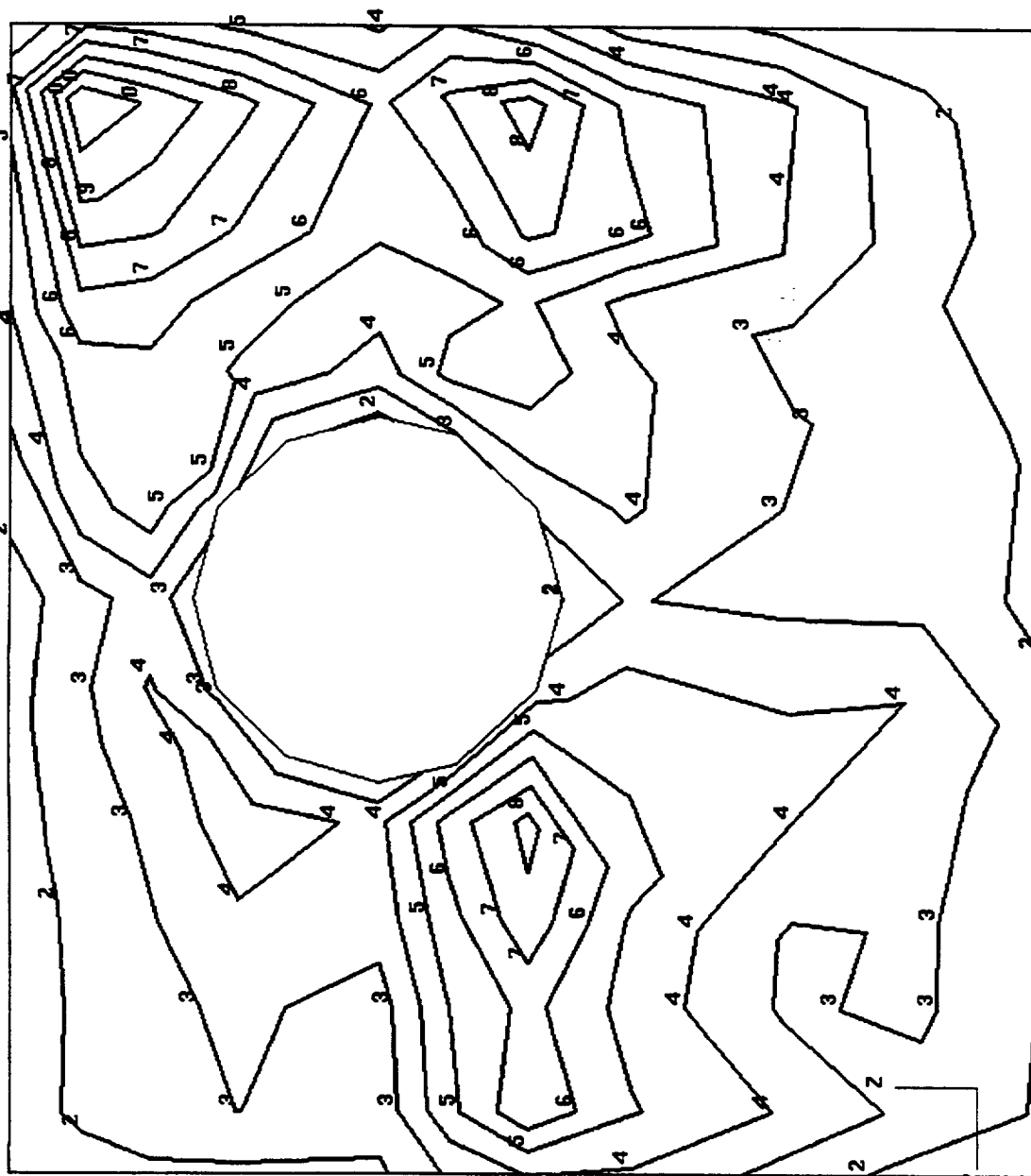
Color Index

0	0.169E+04
1	0.151E+04
2	0.133E+04
3	0.115E+04
4	0.979E+03
5	0.793E+03
6	0.612E+03
7	0.432E+03
8	0.252E+03
9	0.715E+02

Min = 7.153821E+01
Max = 1.874634E+03
Min ID= 1455
Max ID= 1890
Contour_4:
Stress Tensor

Von Mises
At Z2

Design_Qy=-20.6_Ox=-21.2
Static Subcase



Metsat AMSU-A1 Lower Front Panel

Time: 16:36:16
Date: 02/28/96

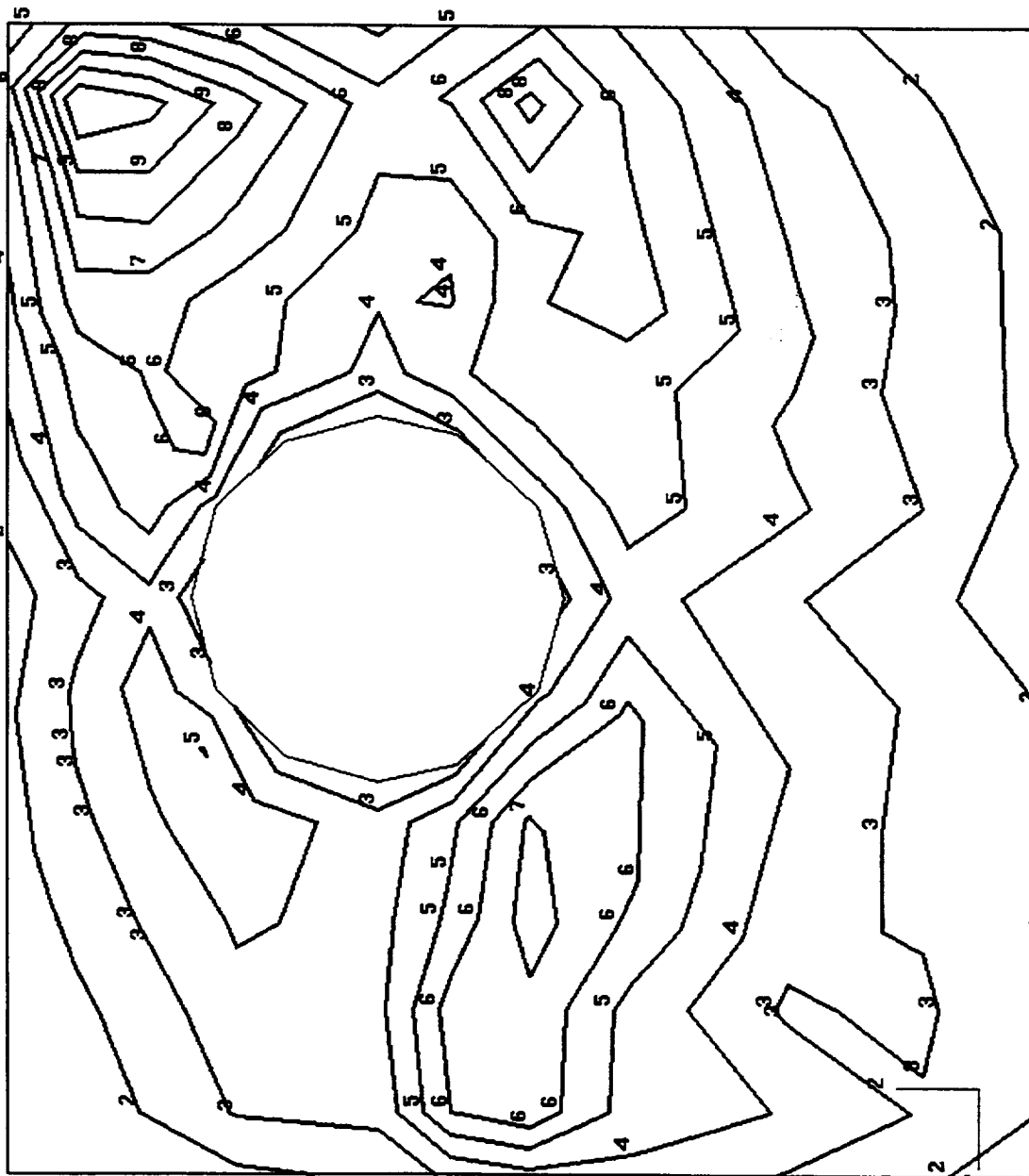
Contour
Node Scalar1

Color Index	
0	0.171E+04
9	0.152E+04
8	0.134E+04
7	0.115E+04
6	0.964E+03
5	0.778E+03
4	0.592E+03
3	0.406E+03
2	0.220E+03
1	0.337E+02

Min = 3.373171E+01
Max = 1.894972E+03
Min ID= 1455
Max ID= 1890
Contour_3:
Stress Tensor

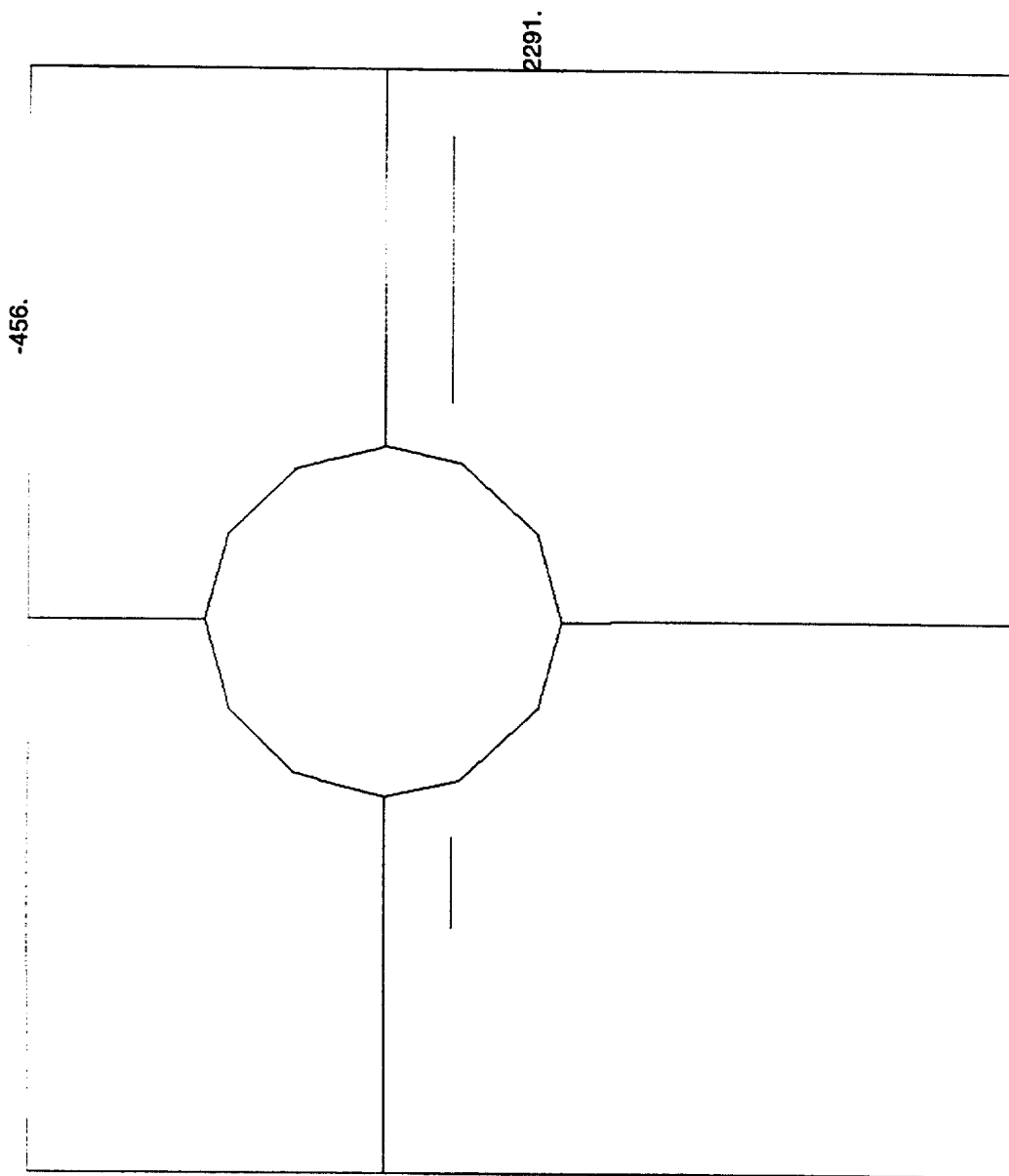
Von Mises
At Z1

Design_Gy=-20.6_Gx=-21.2
Static Subcase



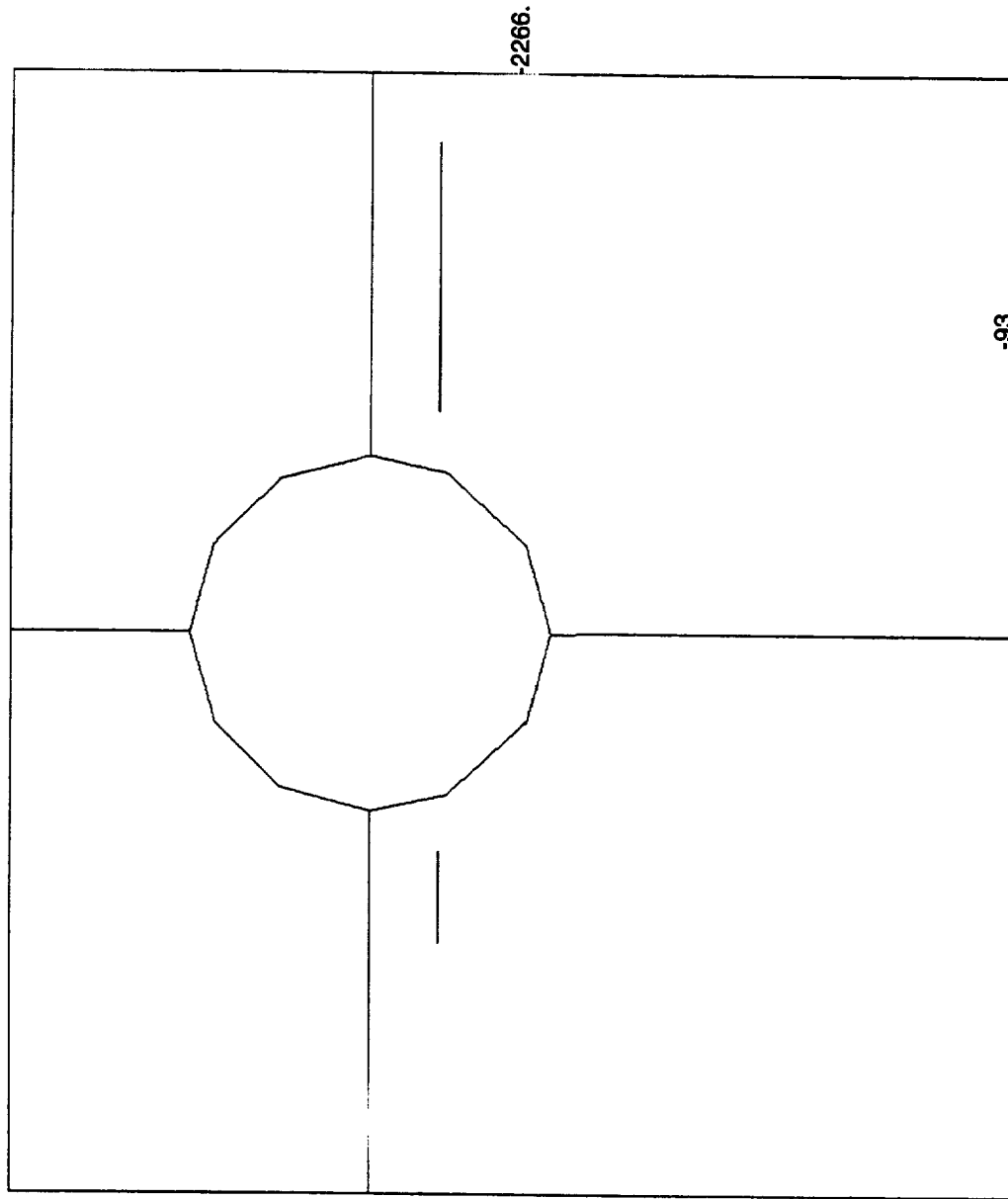
FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:30:36

Lower Front Panel Beams

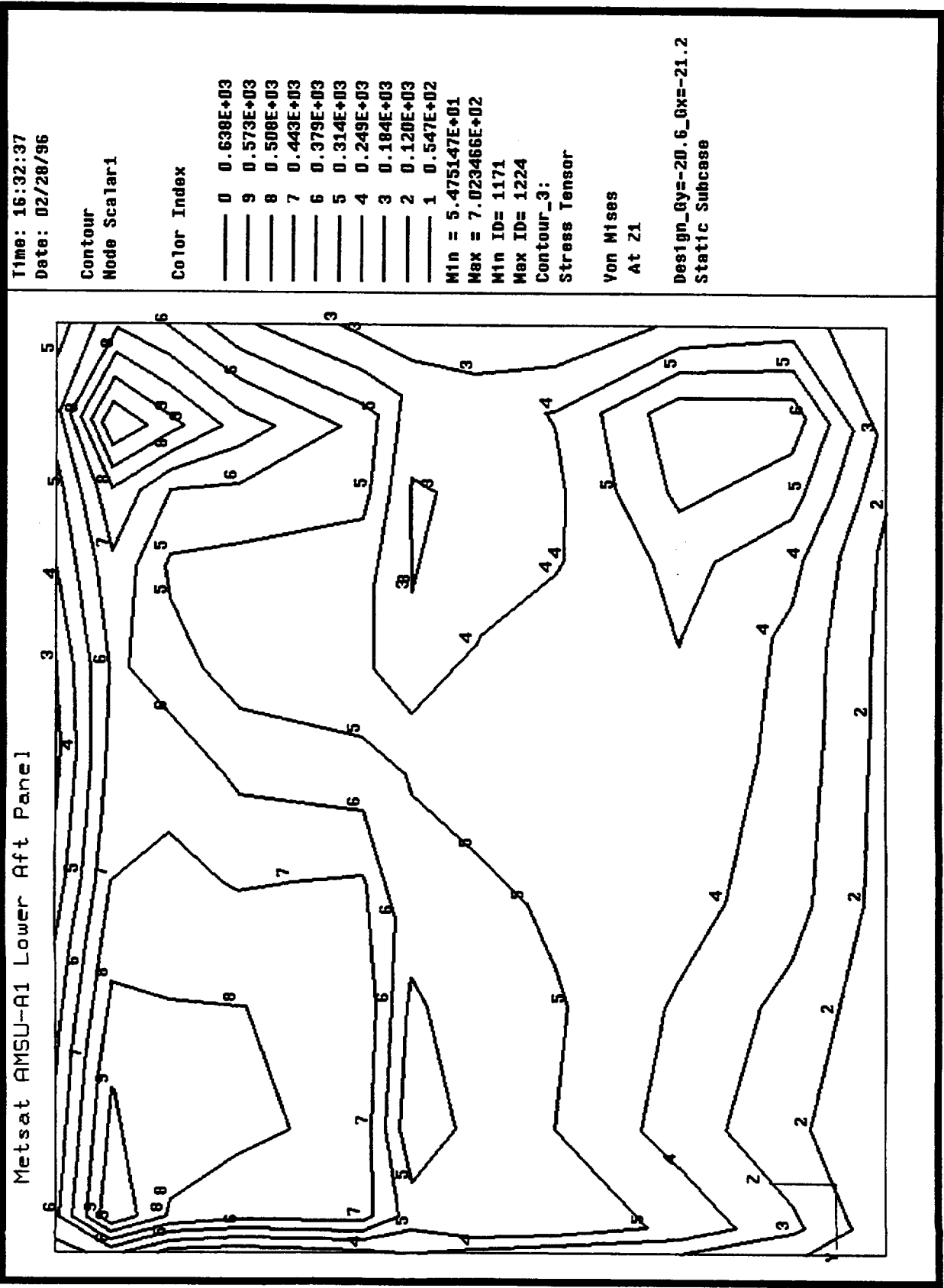


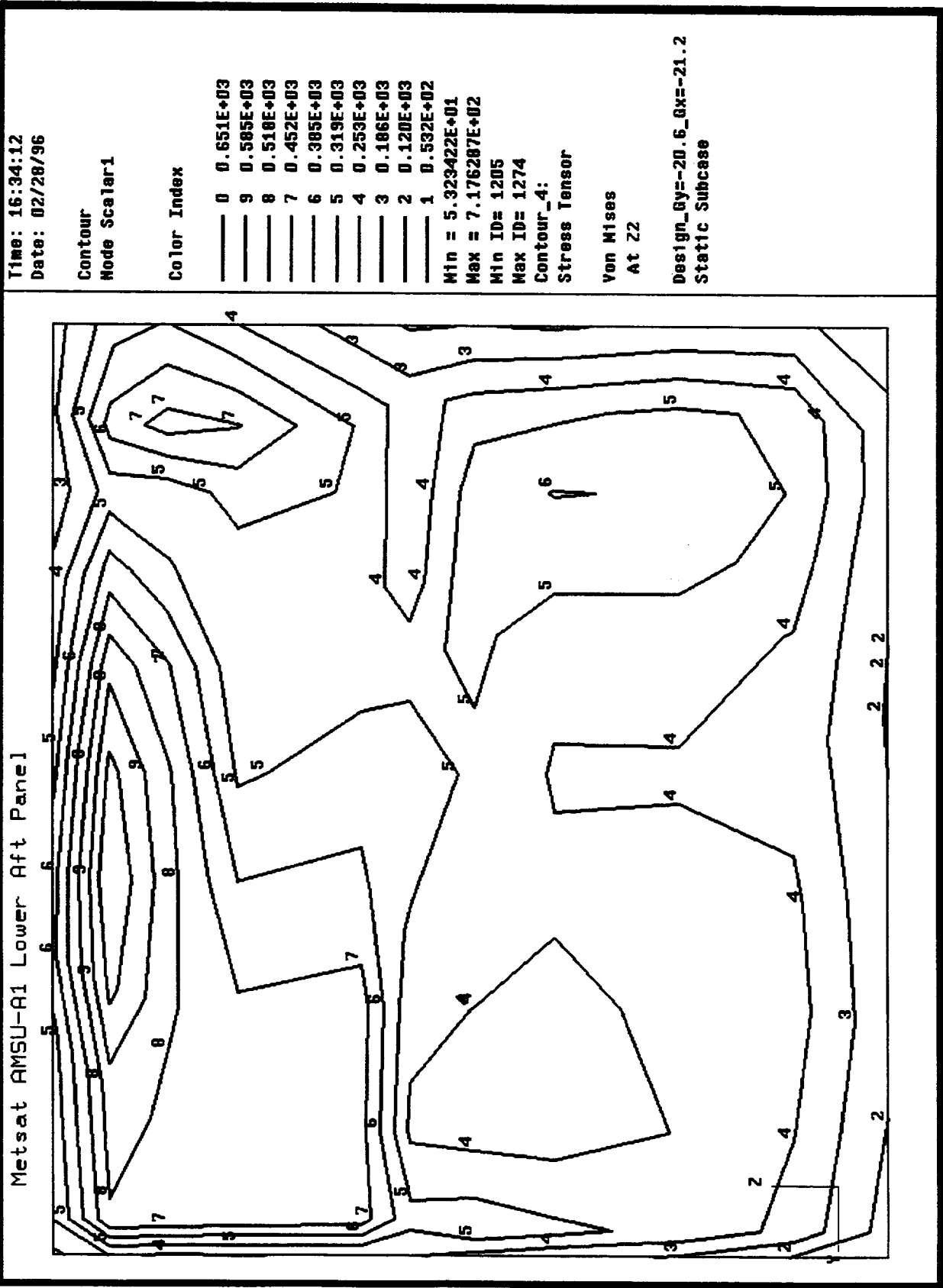
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:30:47
Lower Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

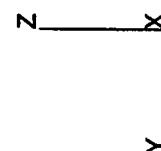
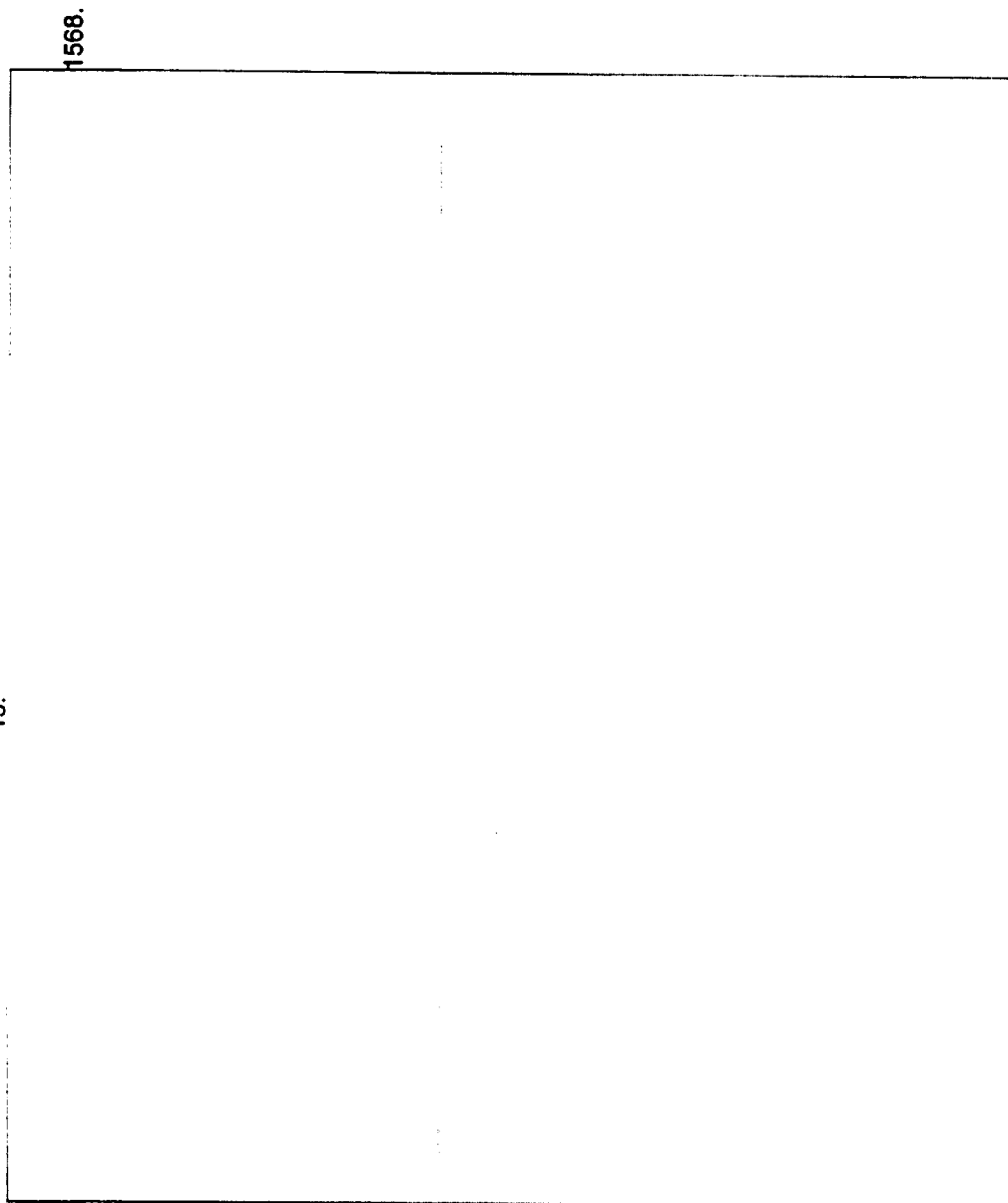




FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:19:46

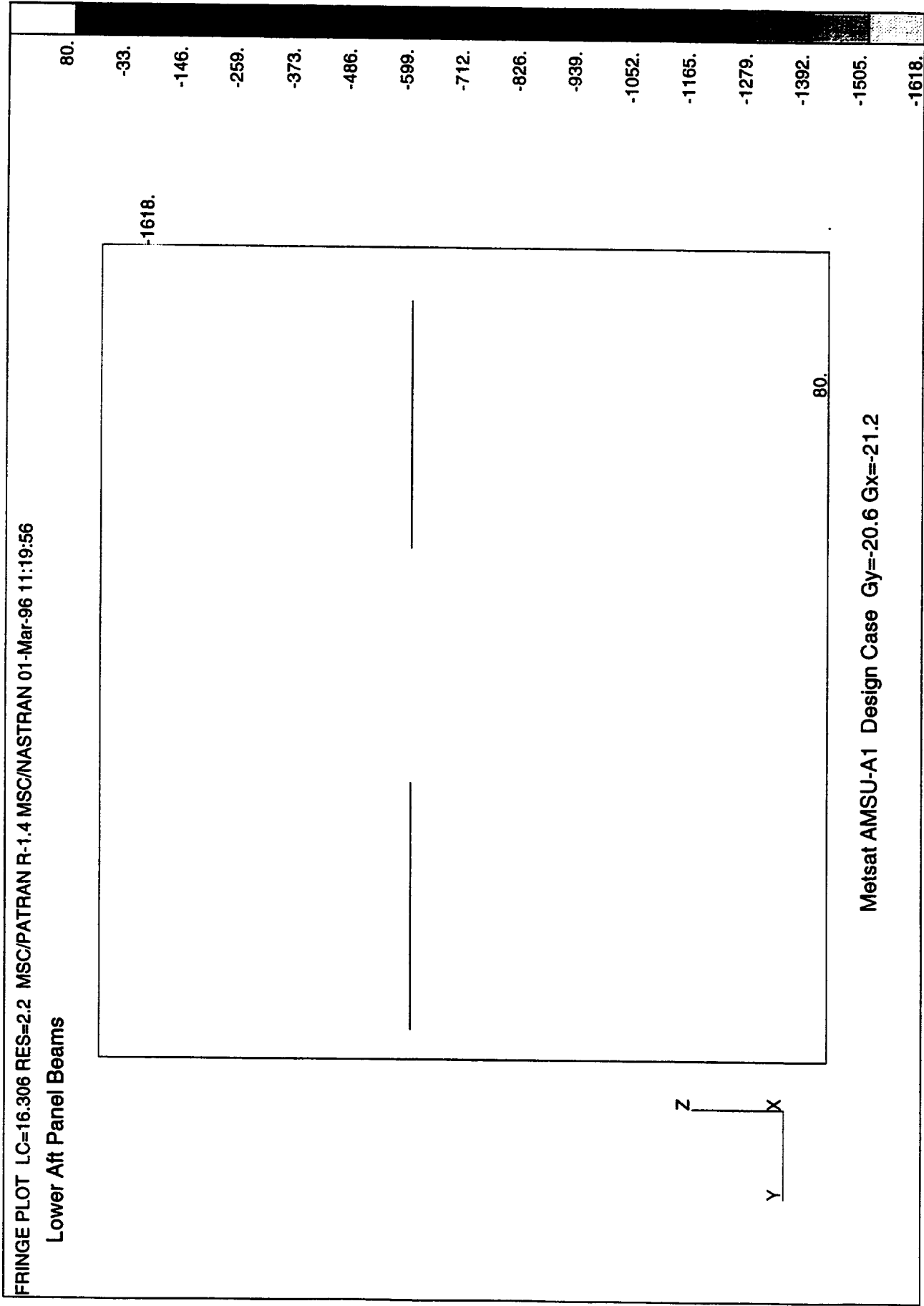
Lower Aft Panel Beams

-15.



1568.
1462.
1357.
1251.
1146.
1040.
935.
829.
724.
618.
513.
407.
302.
196.
91.
-15.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2



Time: 15:57:22
Date: 02/28/96

Contour
Node Scalar1

Color Index

0	0.996E+03
1	0.887E+03
2	0.778E+03
3	0.669E+03
4	0.560E+03
5	0.451E+03
6	0.342E+03
7	0.233E+03
8	0.124E+03
9	0.146E+02

Min = 1.459149E+01

Max = 1.104738E+03

Min ID= 1457

Max ID= 1477

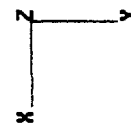
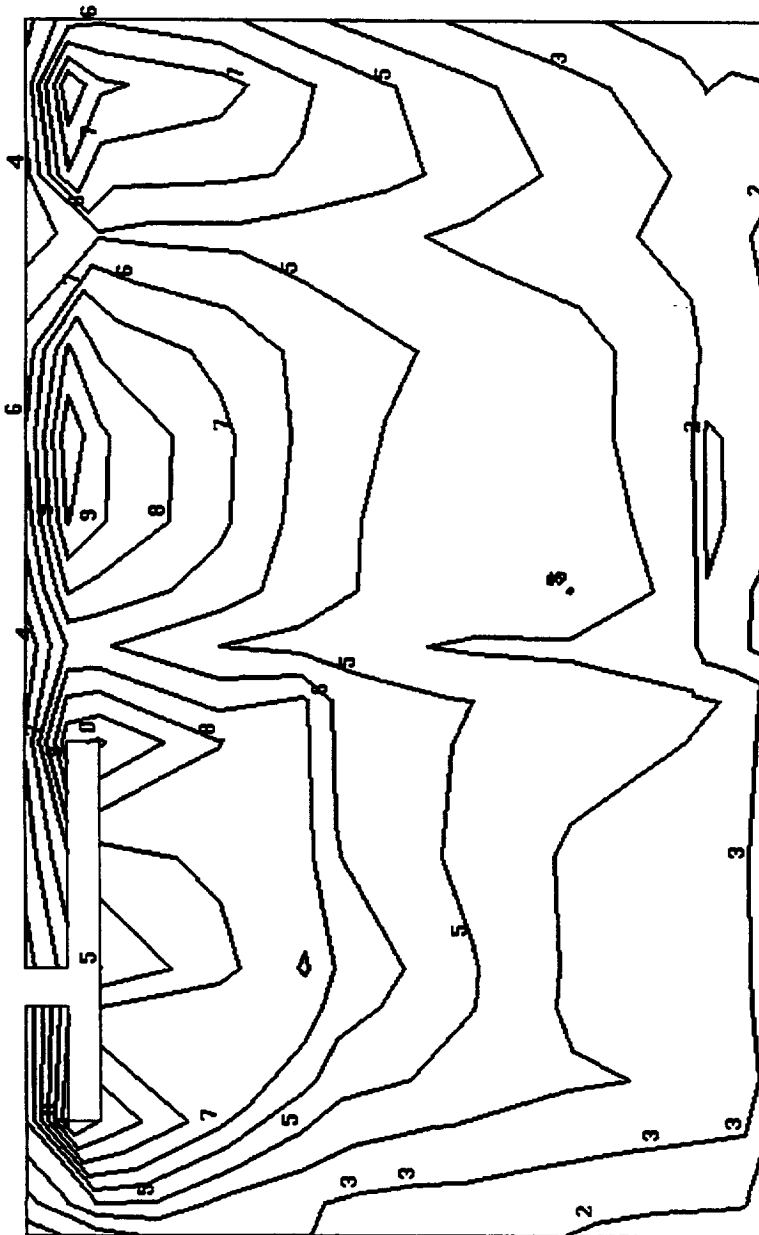
Contour_1:

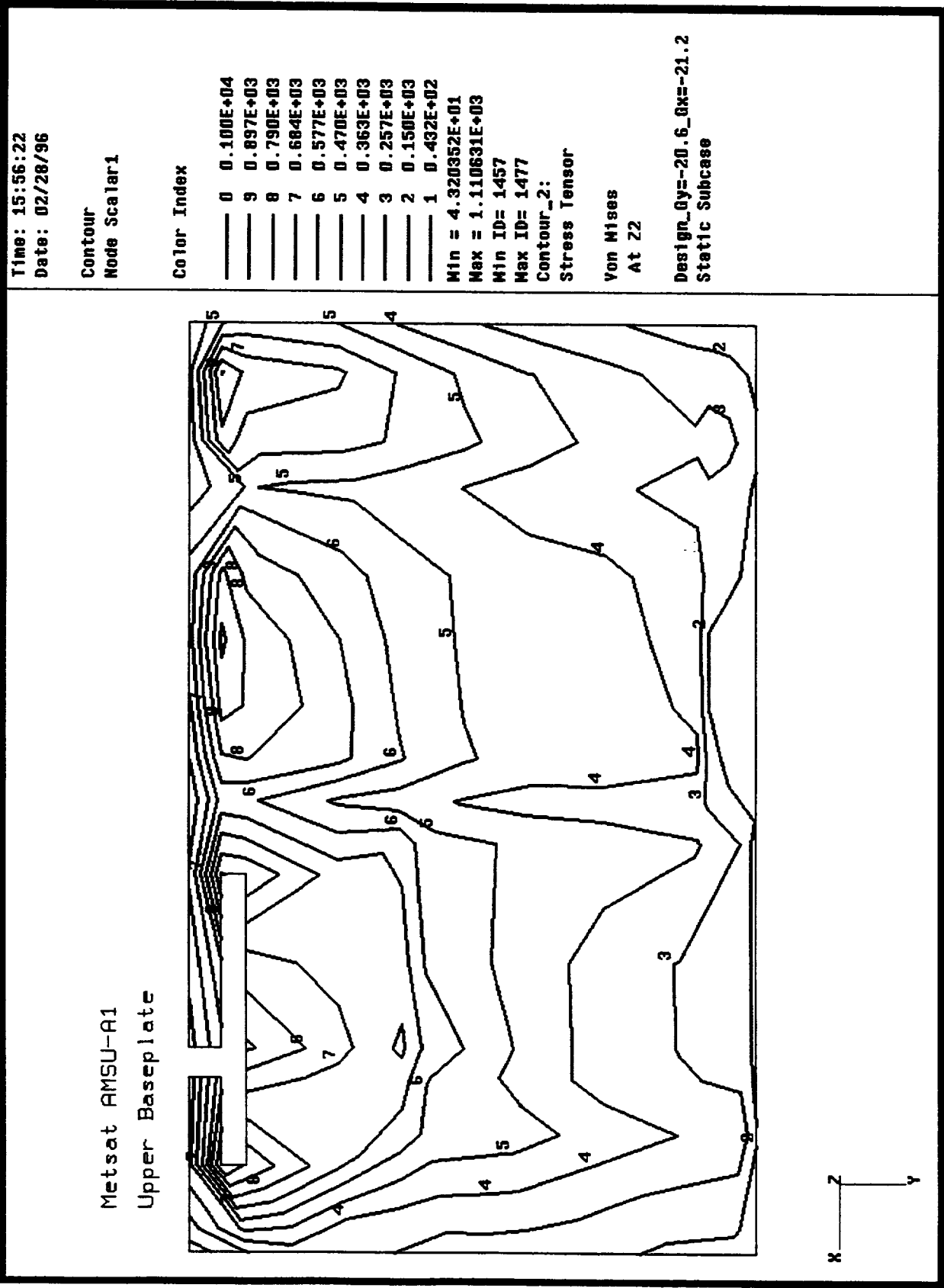
Stress Tensor

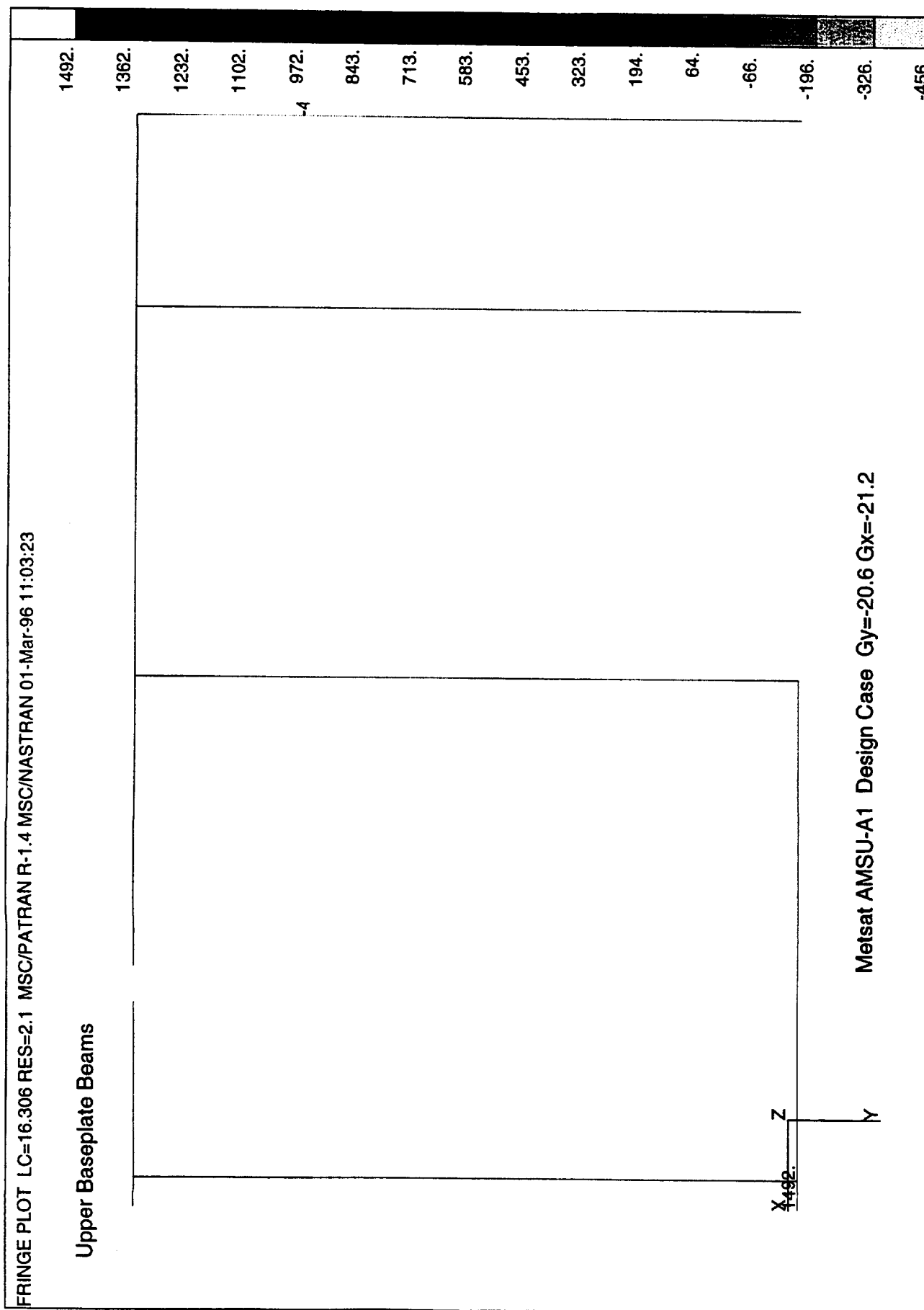
Von Mises
At Z1

Design_By=-20.6_Gx=-21.2
Static Subcase

Metsat AMSU-A1
Upper Baseplate

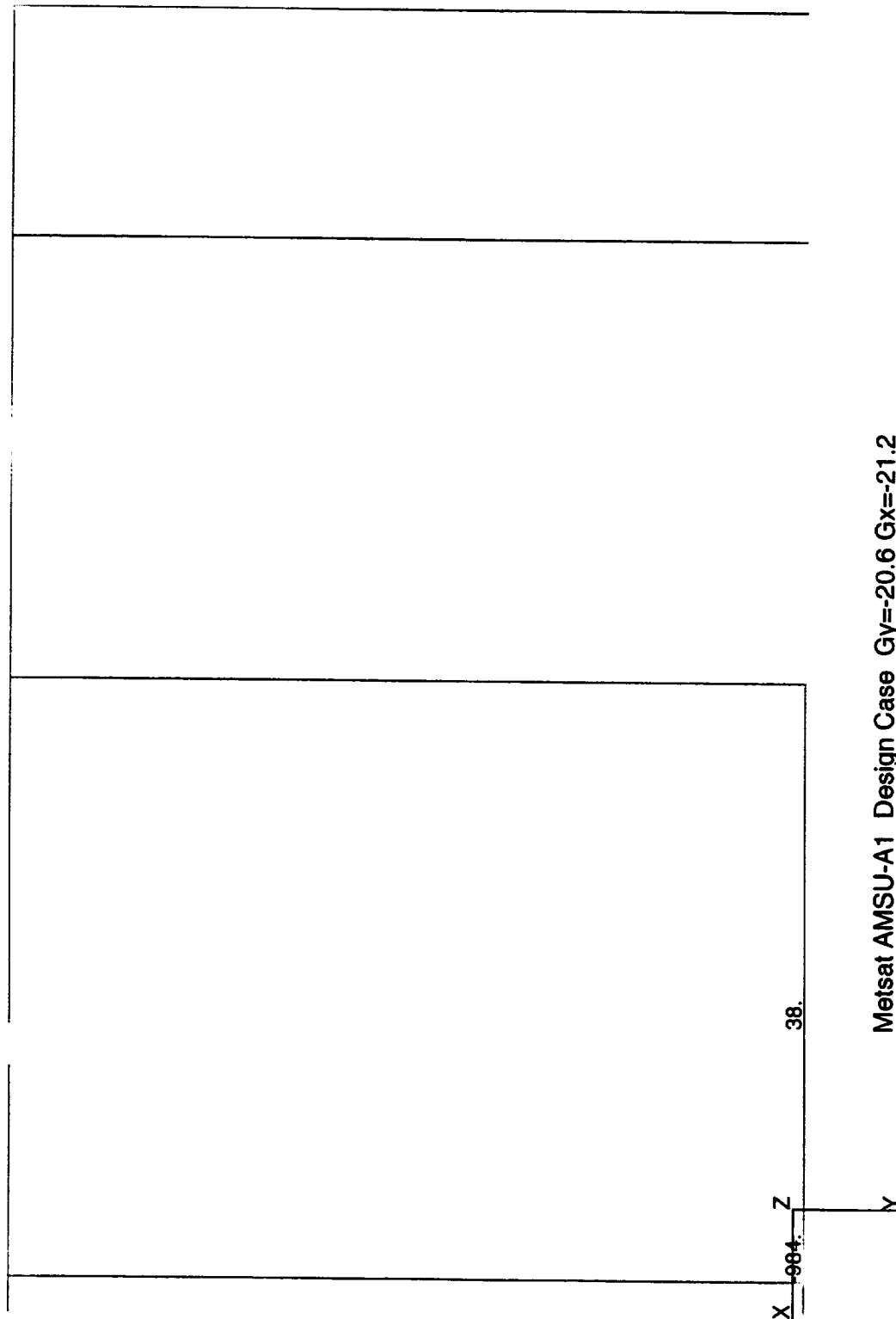




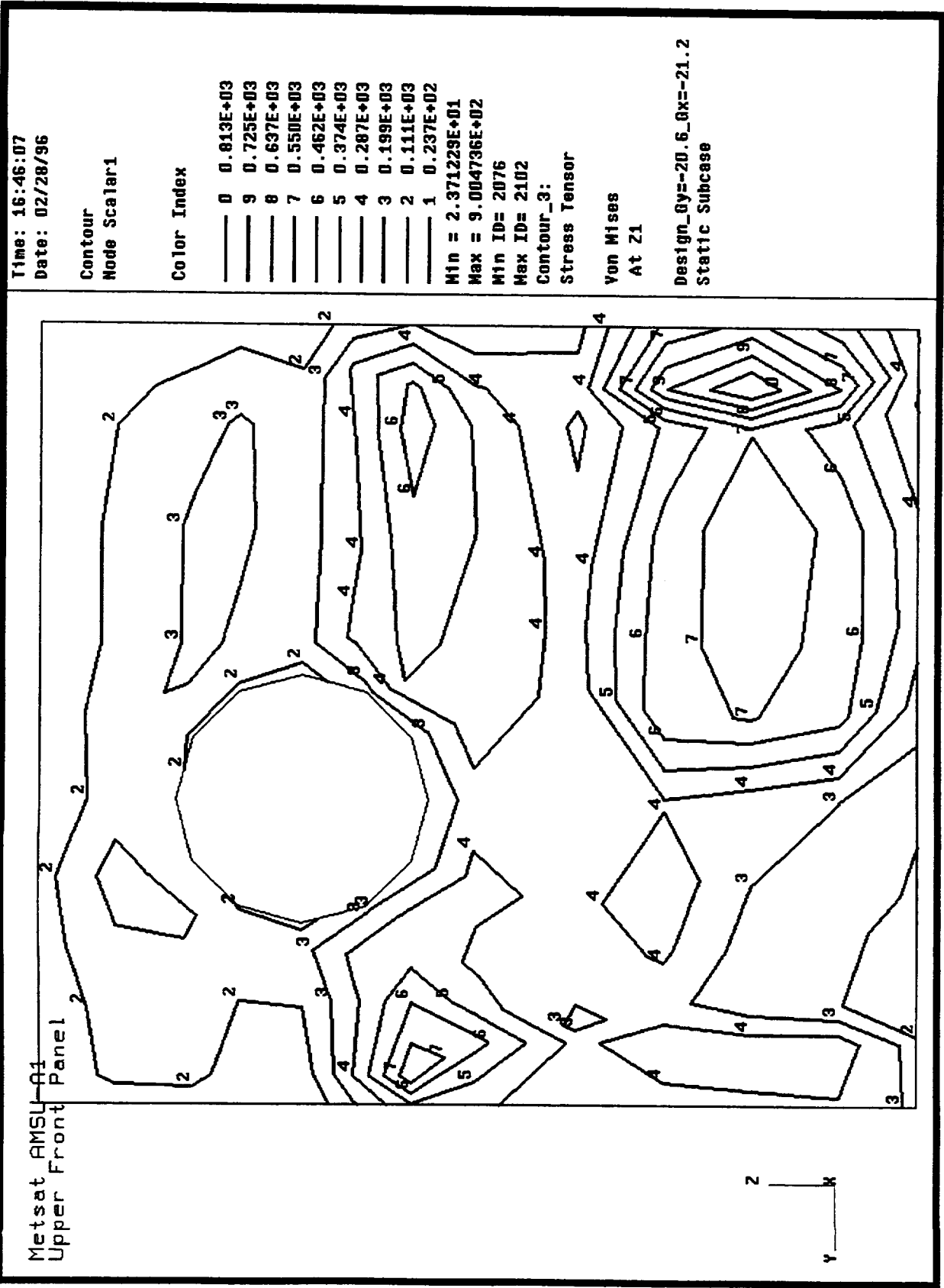


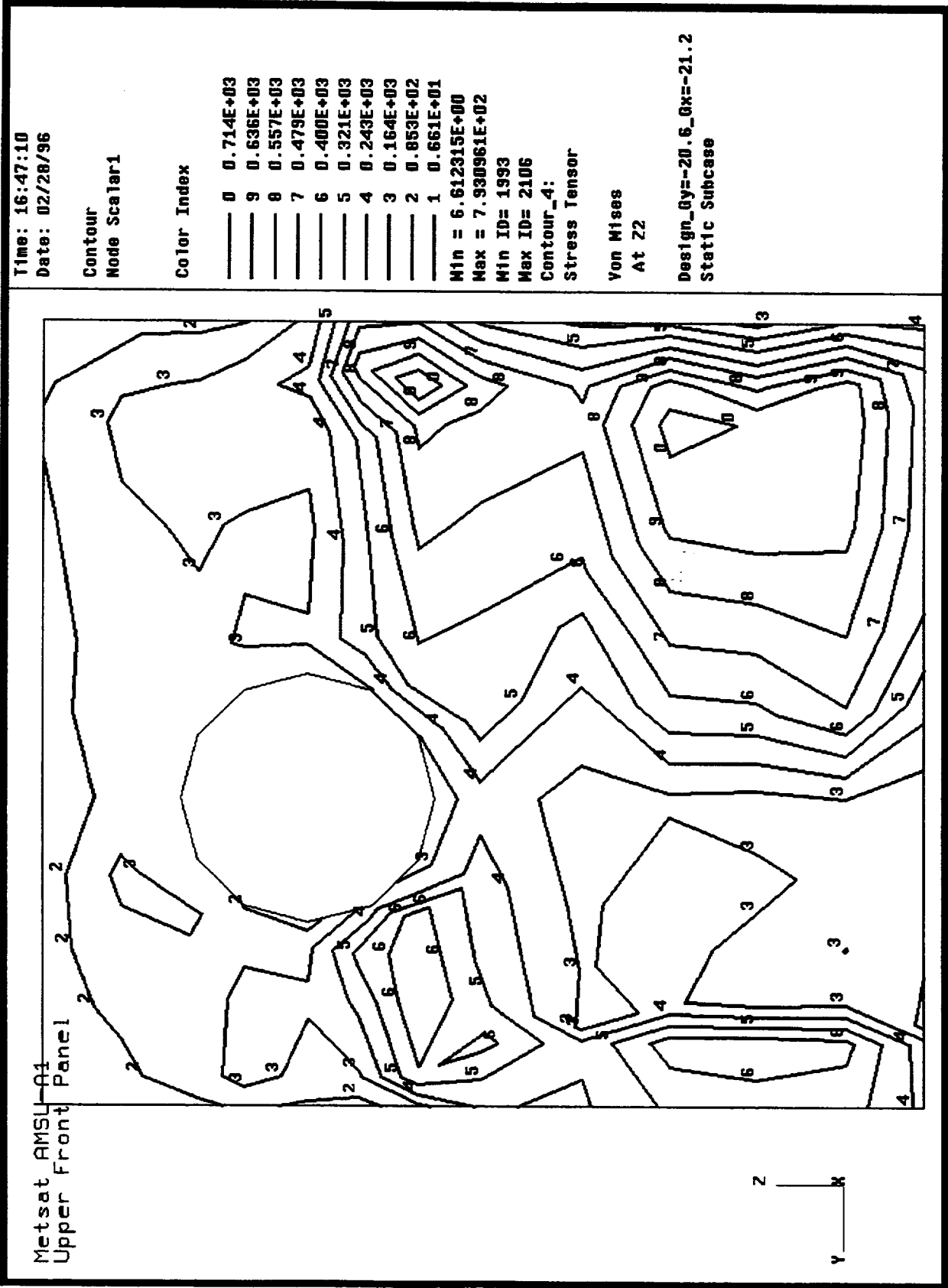
FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:03:37

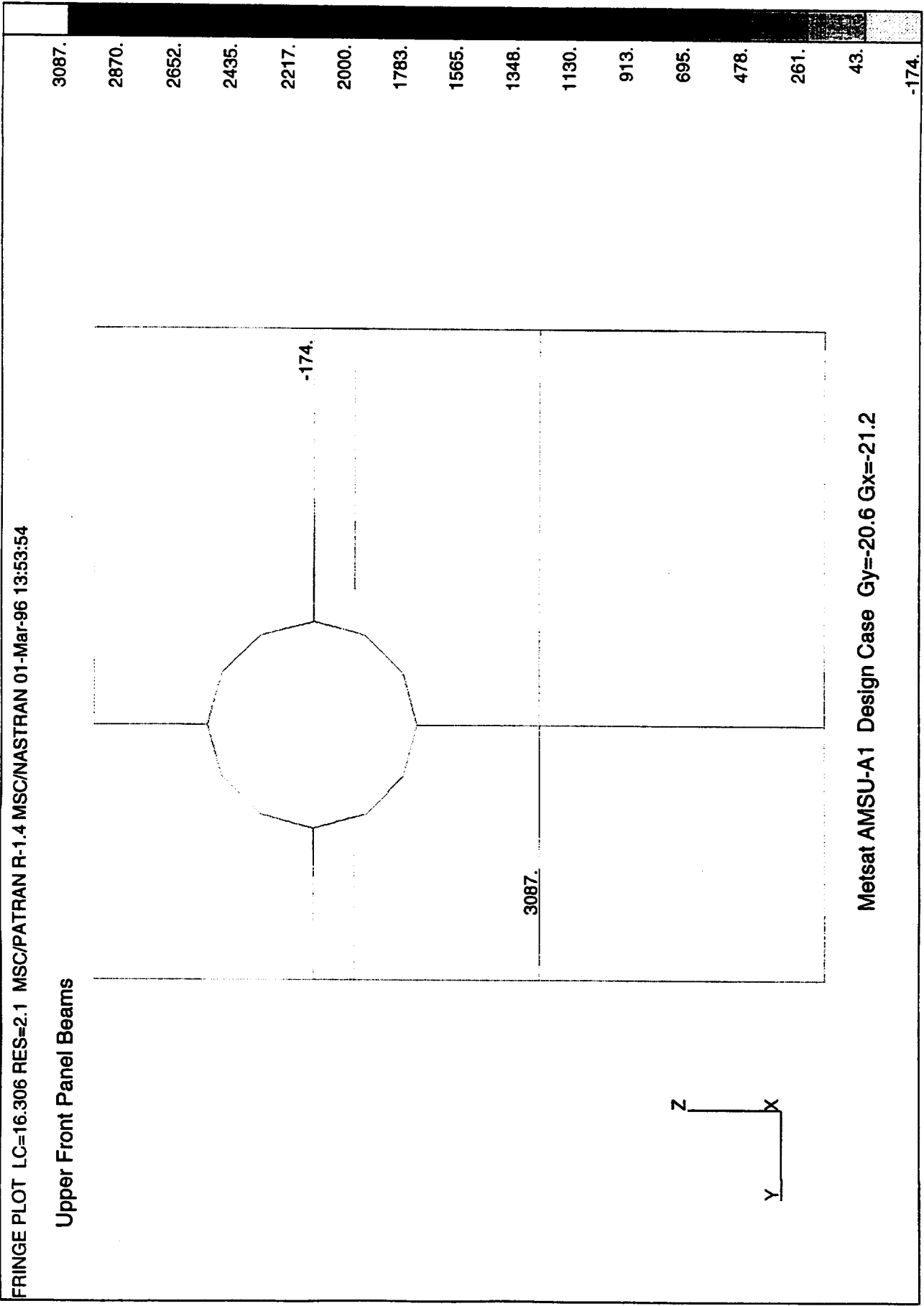
Upper Baseplate Beams

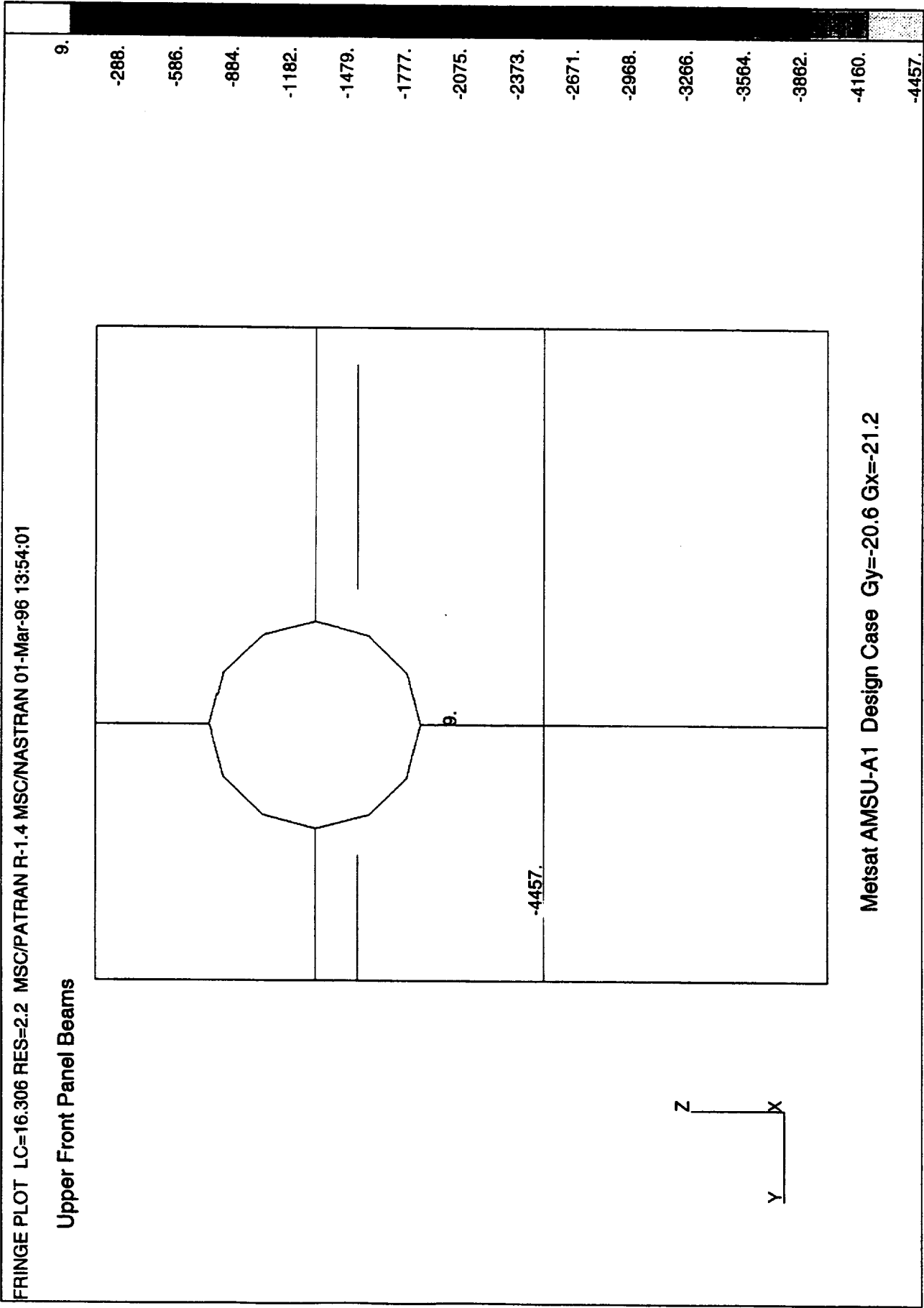


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2









Time: 16:45:35
Date: 02/28/96

Contour
Node Scalar1

Color Index

0	0.463E+04
1	0.413E+04
2	0.362E+04
3	0.312E+04
4	0.261E+04
5	0.211E+04
6	0.160E+04
7	0.110E+04
8	0.594E+03
9	0.892E+02

Min = 8.918046E+01

Max = 5.137239E+03

Min ID= 6878

Max ID= 5594

Contour_3:

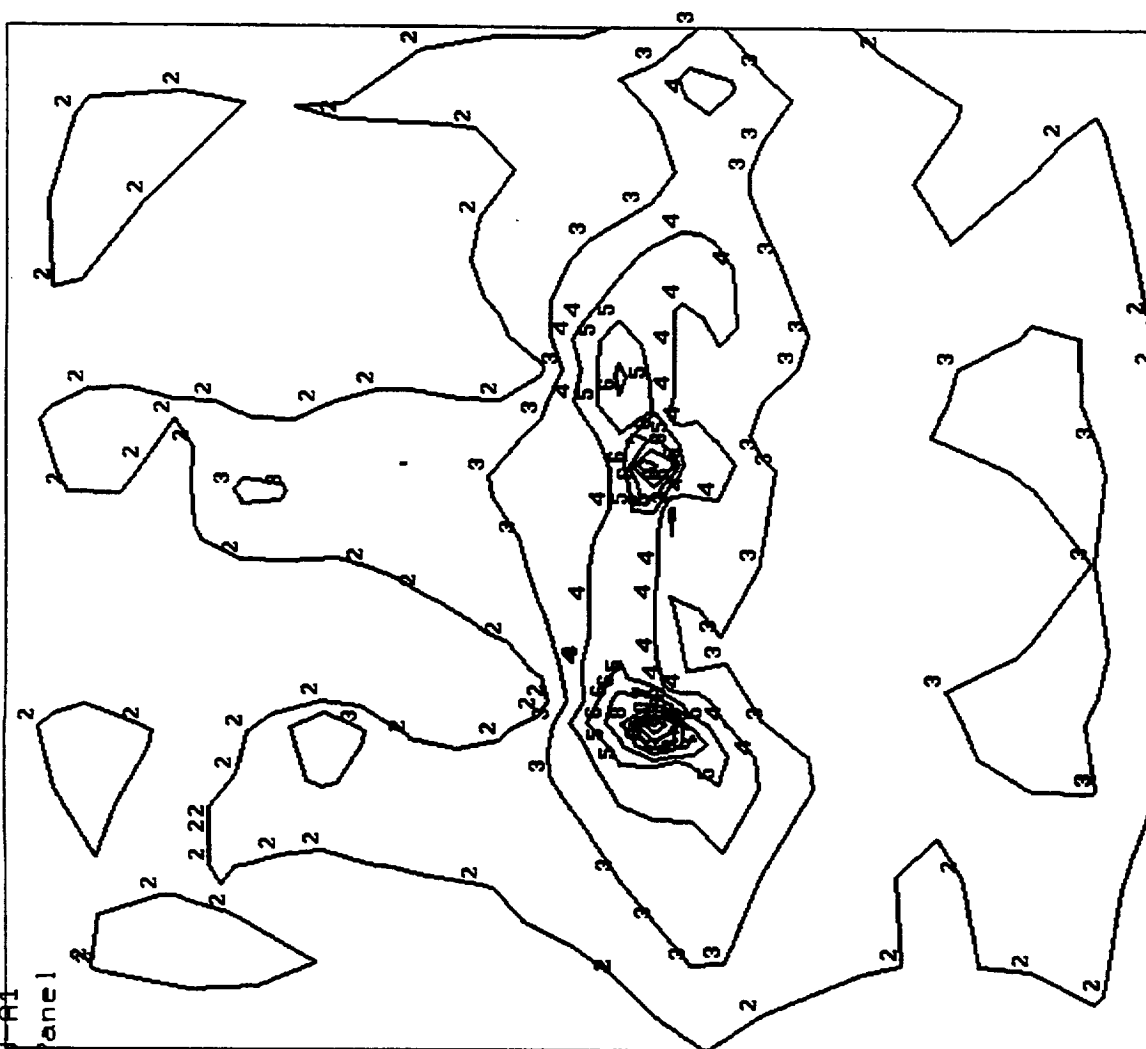
Stress Tensor

Von Mises

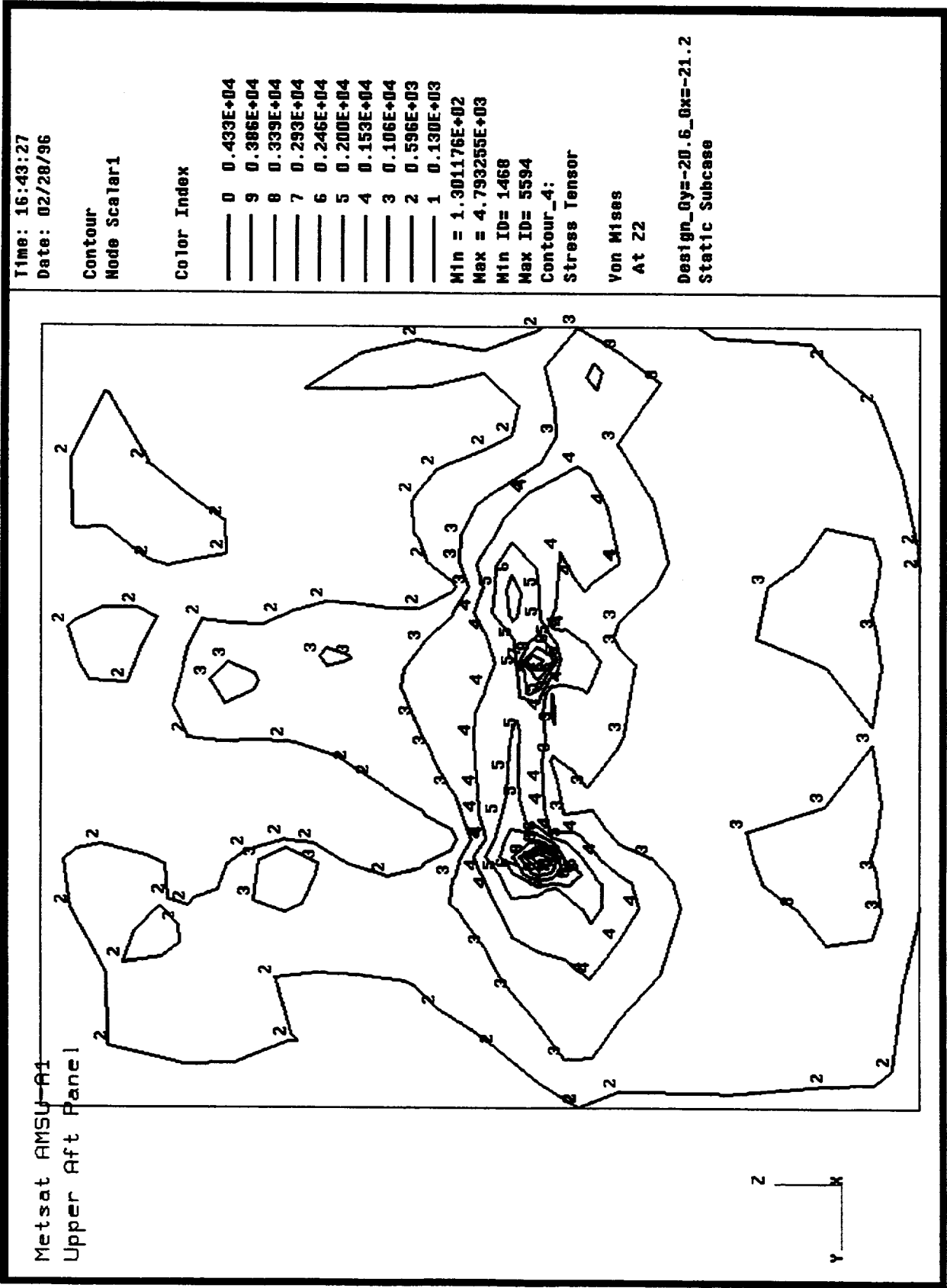
At 21

Design_0y=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1
Upper Aft Panel

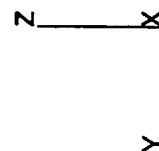
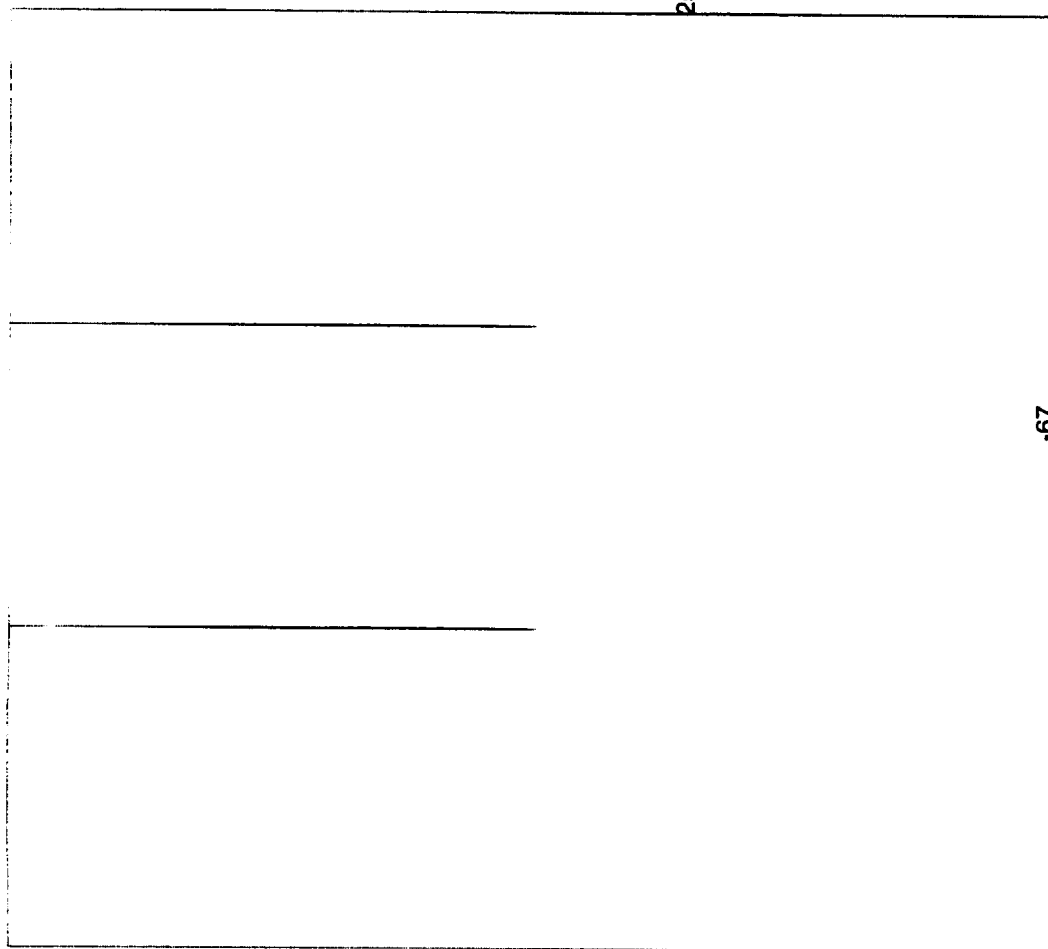


Z
Y
X



FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:50:48

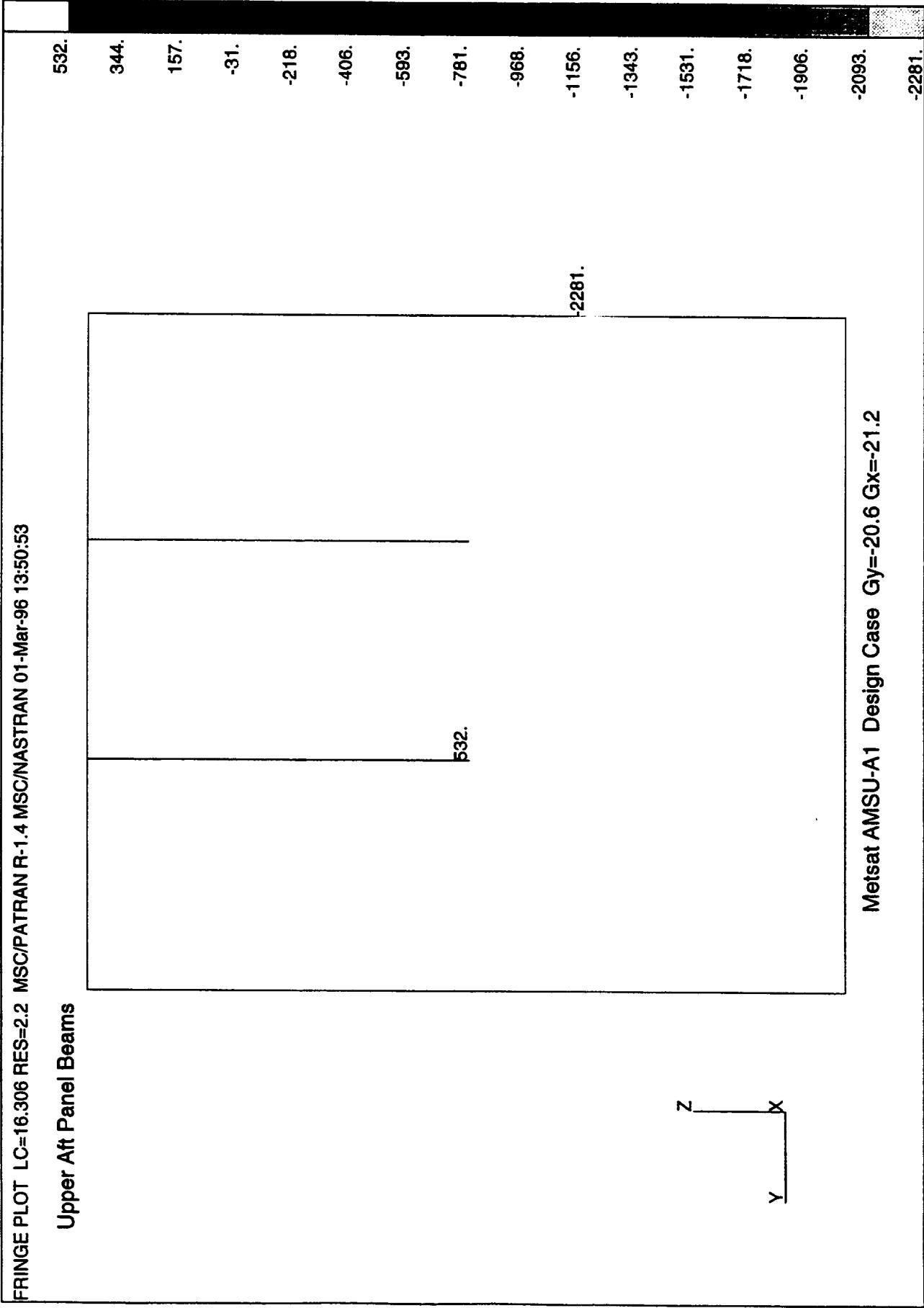
Upper Aft Panel Beams



-67.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

2589.
2412.
2235.
2058.
1881.
1704.
1527.
1349.
1172.
995.
818.
641.
464.
287.
110.
-67.



Time: 15:58:08
Date: 02/28/96

Contour
Node Scalar1

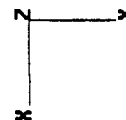
Color Index	0	0.800E+04
	9	0.712E+04
	8	0.623E+04
	7	0.535E+04
	6	0.446E+04
	5	0.358E+04
	4	0.269E+04
	3	0.181E+04
	2	0.923E+03
	1	0.379E+02

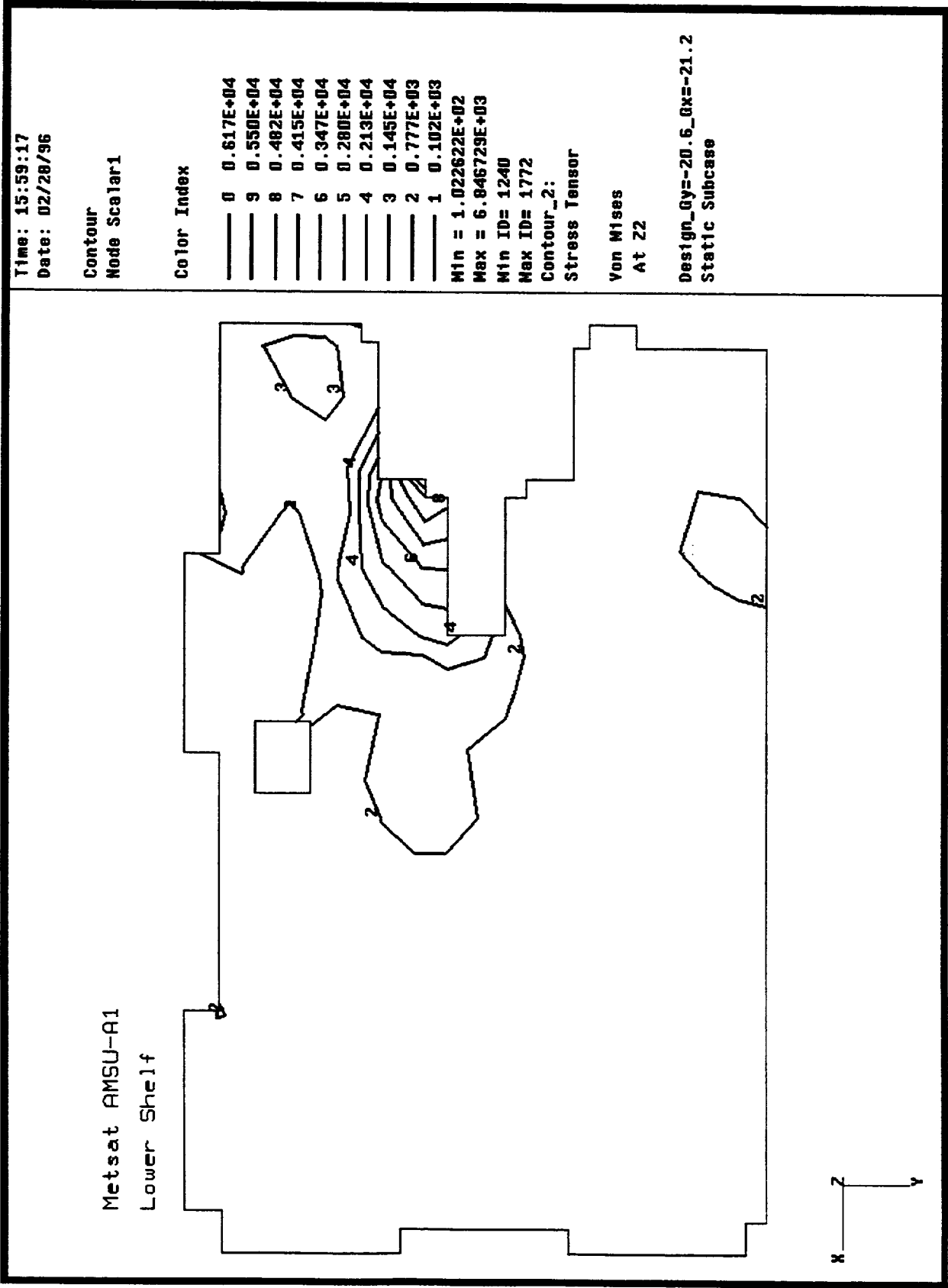
Min = 3.794236E+01
Max = 8.889939E+03
Min ID= 1220
Max ID= 1772
Contour_1:
Stress Tensor

Von Mises
At Z1

Design_Qy=-20.6_Qx=-21.2
Static Subcase

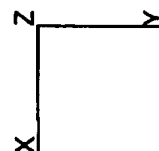
Metsat AMSU-A1
Lower Shelf





FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:39:26

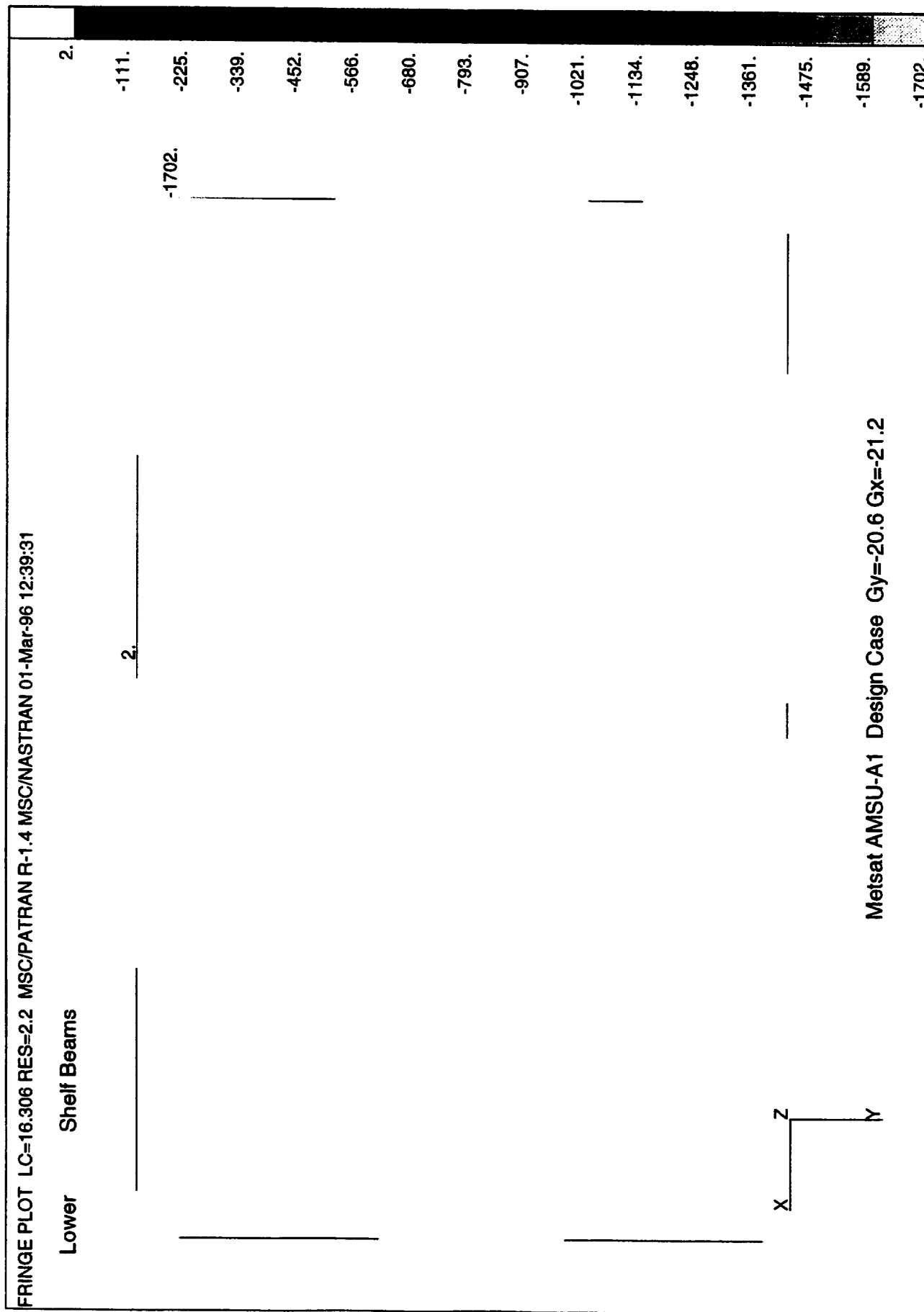
Lower Shelf Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

433.
401.
369.
337.
305.
273.
241.
210.
178.
146.
114.
82.
50.
18.
-13.
-45.

433.
-45.



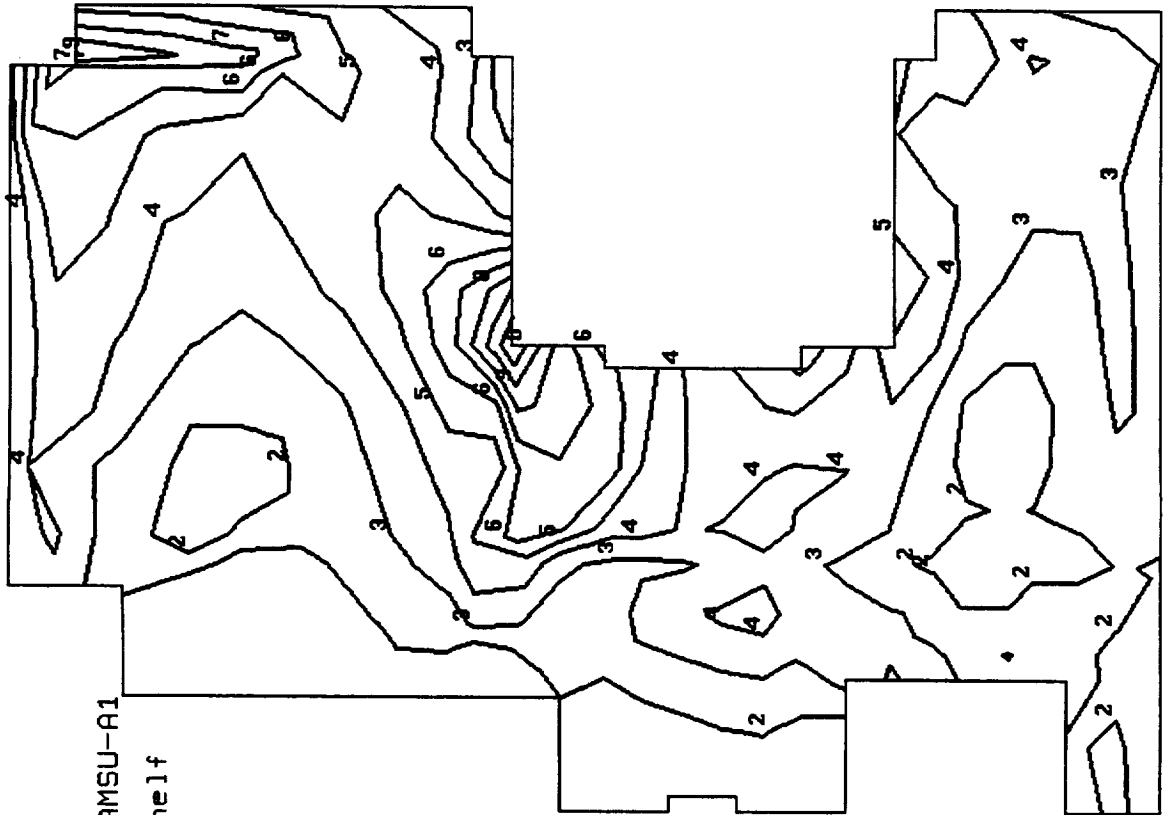
Time: 16:08:02
Date: 02/28/96

Contour
Node Scalar1

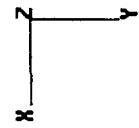
Color	Index
—	0 0.838E+03
—	9 0.745E+03
—	8 0.653E+03
—	7 0.560E+03
—	6 0.468E+03
—	5 0.375E+03
—	4 0.283E+03
—	3 0.190E+03
—	2 0.975E+02
—	1 0.499E+01
Min = 4.987021E+00	
Max = 9.301143E+02	
Min ID= 2556	
Max ID= 2452	
Contour_1:	
Stress Tensor	

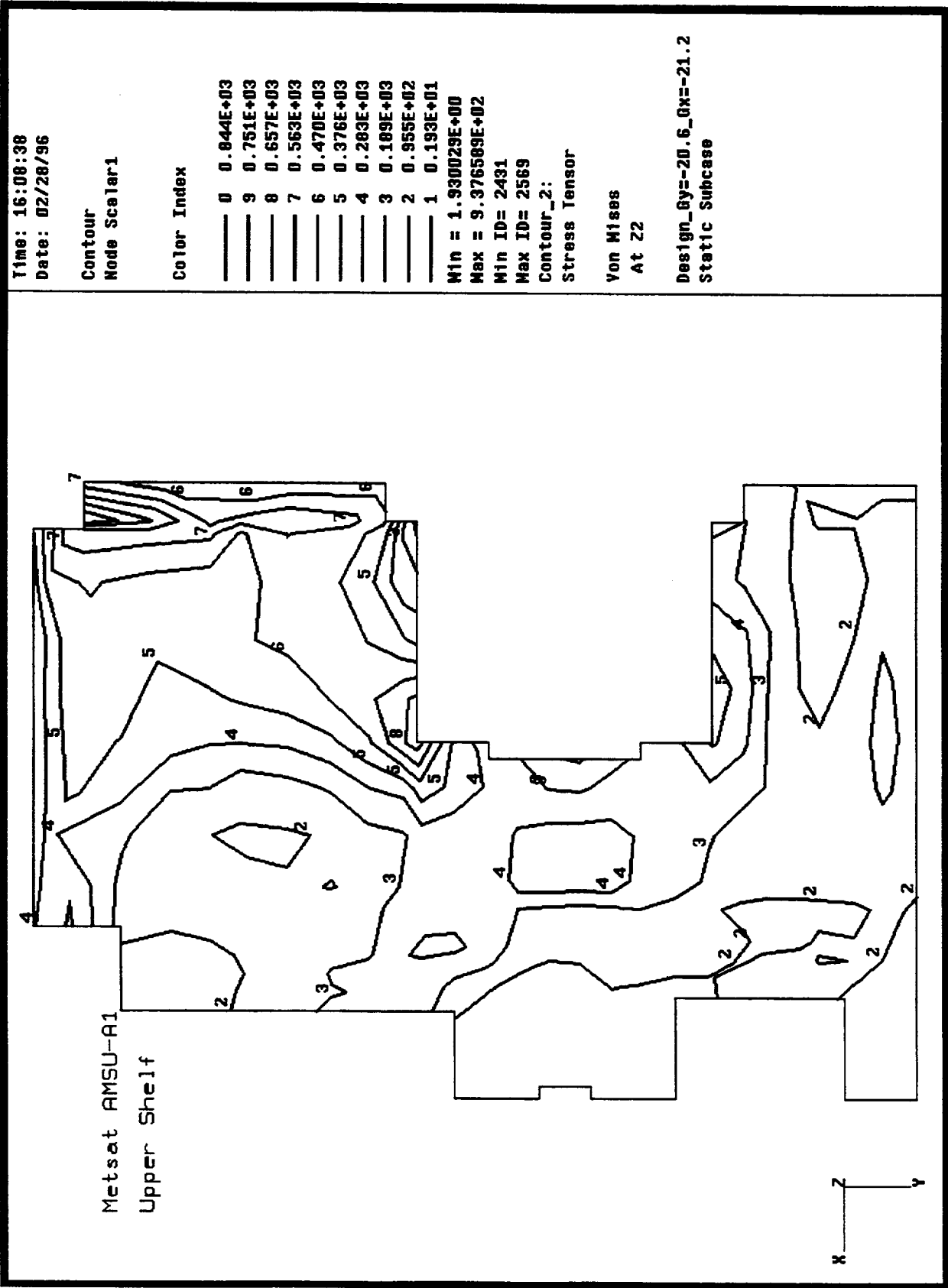
Von Mises
At 21

Design_Gy=-20.6_Gx=-21.2
Static Subcase



Metsat AMSU-A1
Upper Shelf



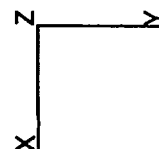


FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:14:57

Upper Shelf Beams

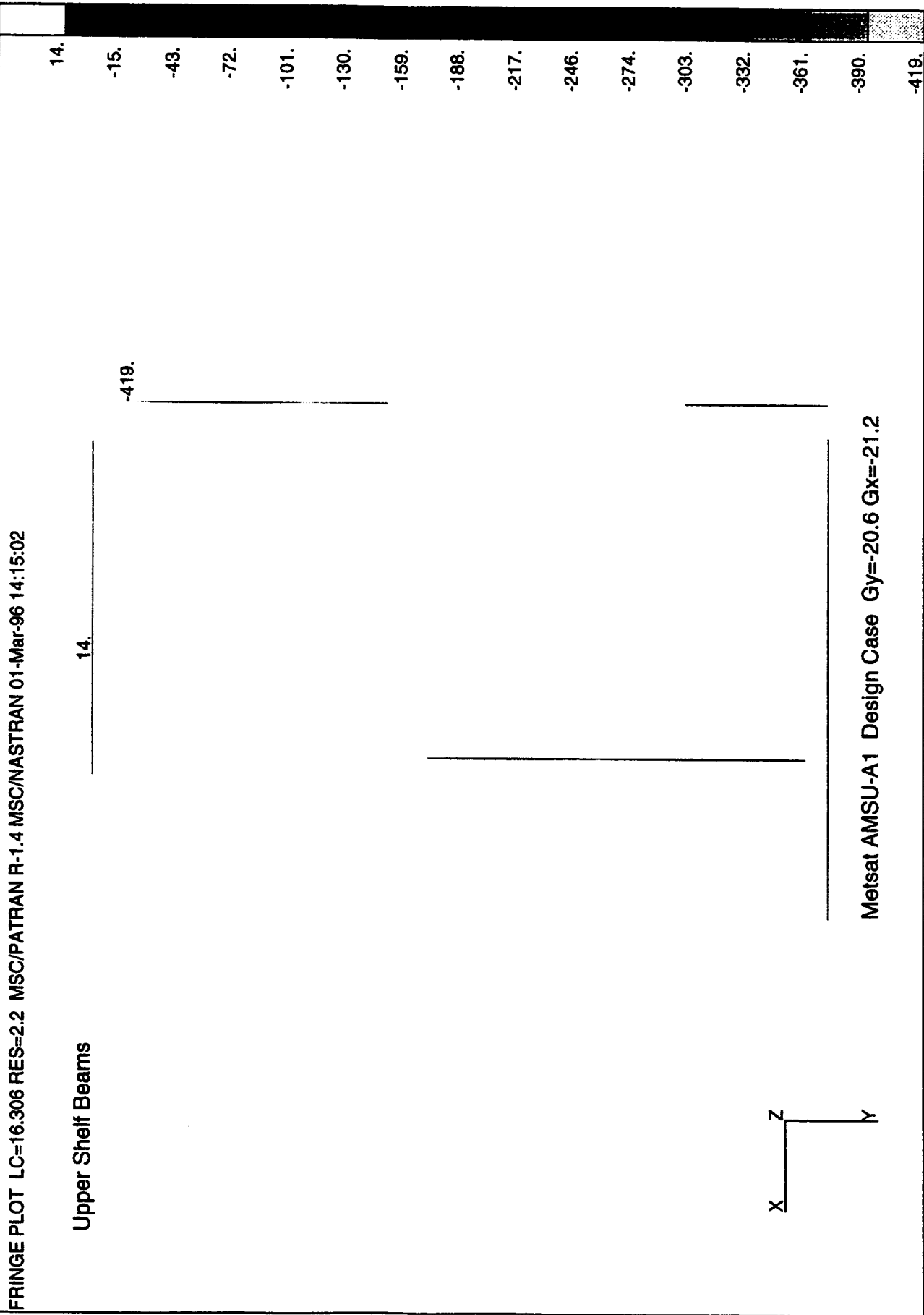
323.

-28.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

323.
299.
276.
253.
229.
206.
182.
159.
136.
112.
89.
65.
42.
19.
-5.
-28.



Time: 14:23:32
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.513E+03
—	9	0.464E+03
—	8	0.414E+03
—	7	0.364E+03
—	6	0.314E+03
—	5	0.264E+03
—	4	0.214E+03
—	3	0.164E+03
—	2	0.114E+03
—	1	0.643E+02

Min = 6.429565E+01

Max = 5.634039E+02

Min ID= 1172

Max ID= 2658

Contour_3:

Stress Tensor

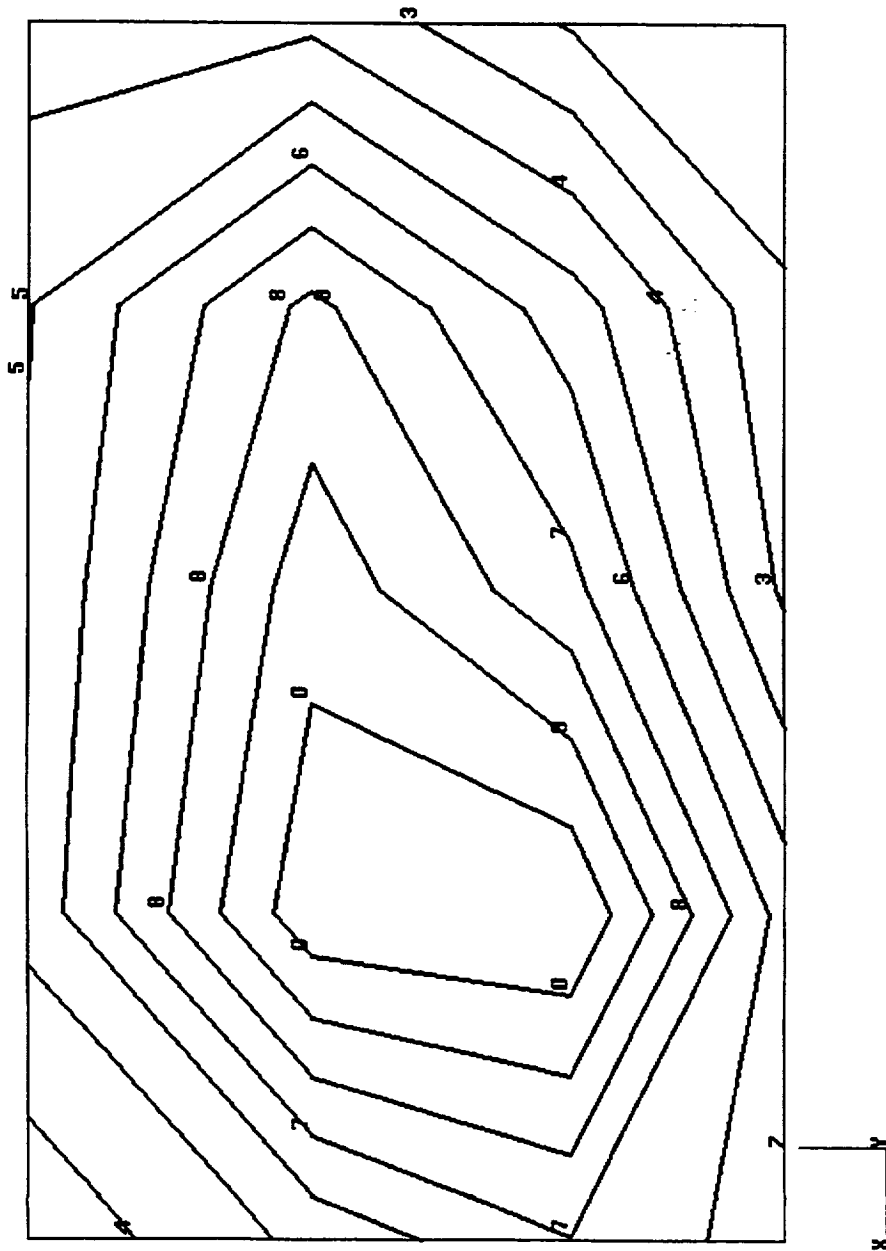
Von Mises

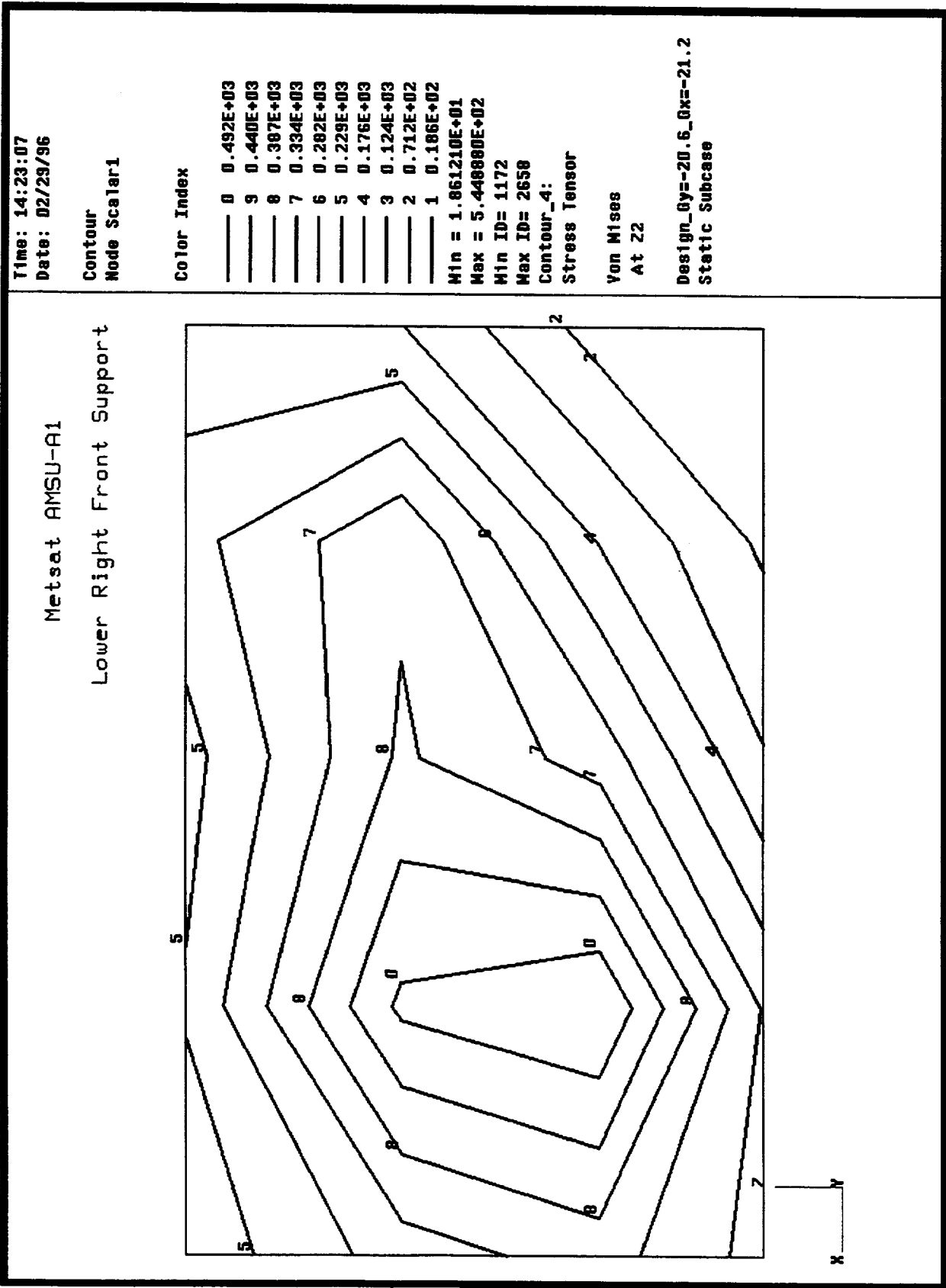
At Z1

Design_0y=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1

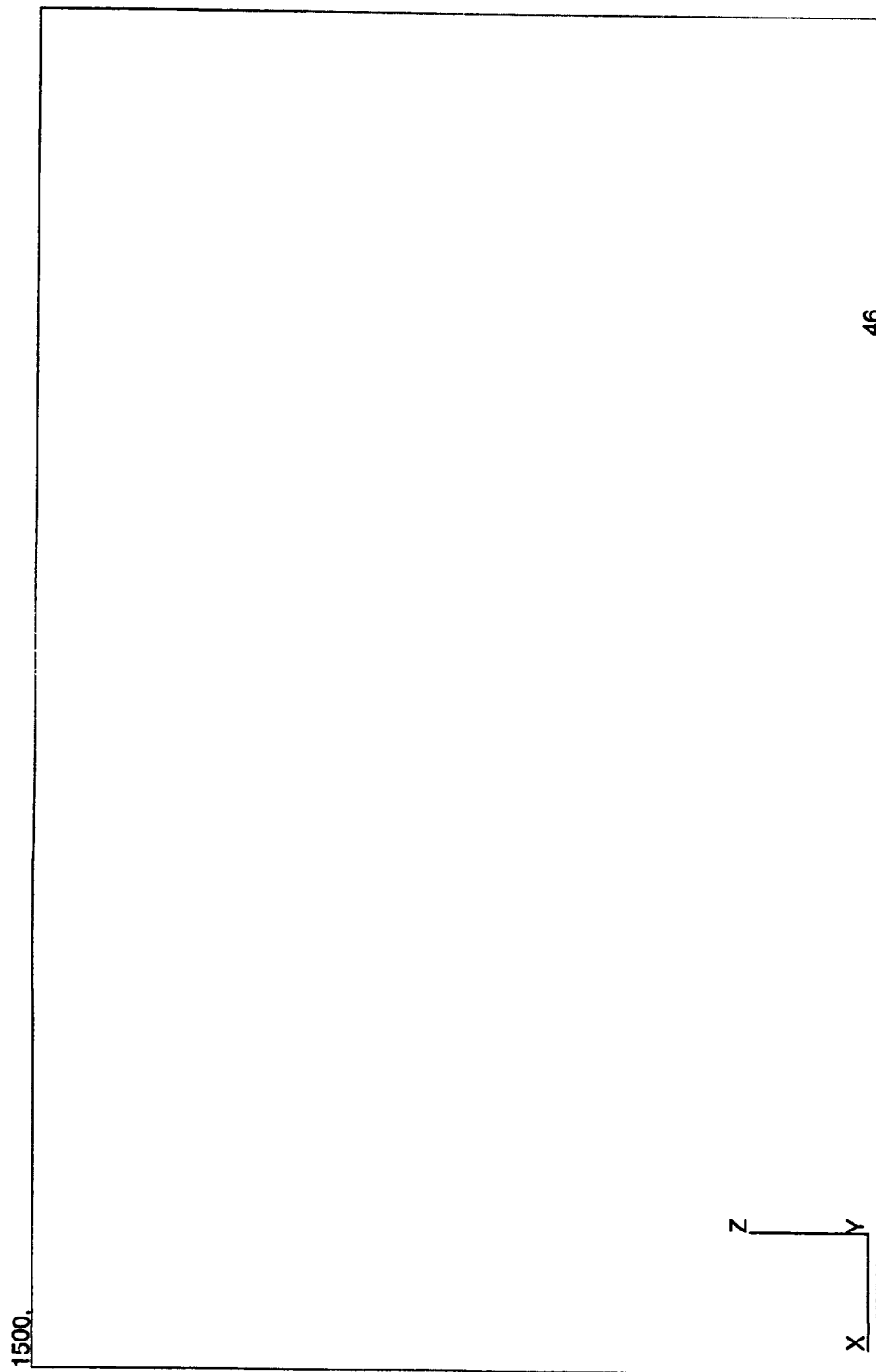
Lower Right Front Support





FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:10:17

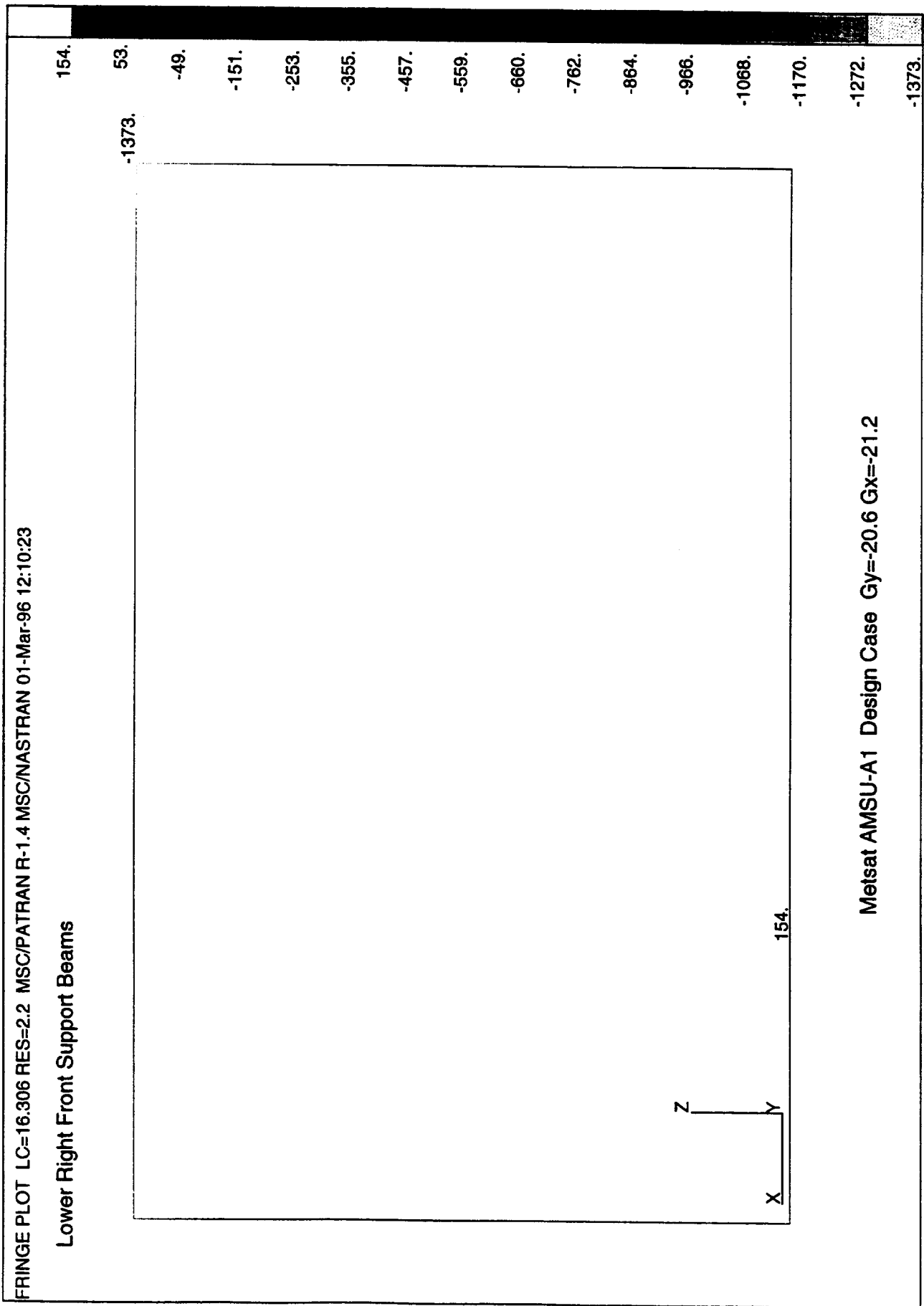
Lower Right Front Support Beams



46.

Meisat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

1500.
1403.
1306.
1209.
1112.
1015.
918.
822.
725.
628.
531.
434.
337.
240.
143.
46.



Time: 14:03:11
Date: 02/29/96

Contour
Node Scalar1

Color Index

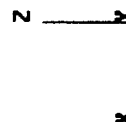
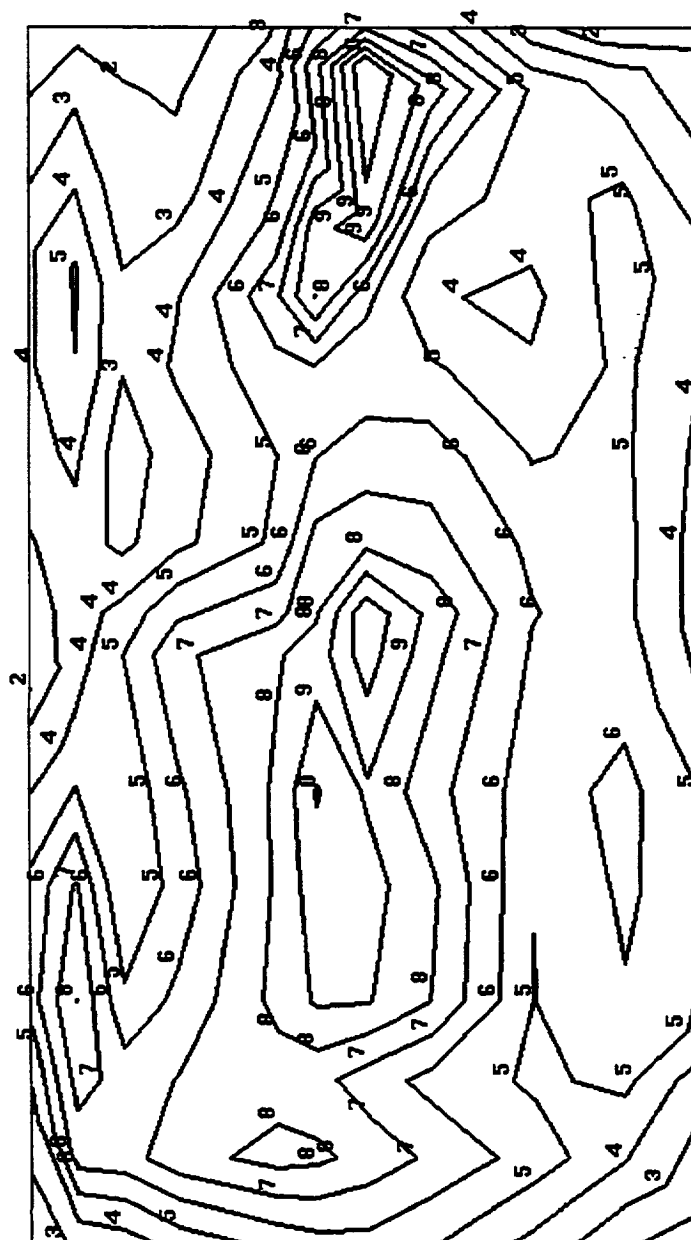
0	0.117E+04
9	0.105E+04
8	0.919E+03
7	0.793E+03
6	0.667E+03
5	0.540E+03
4	0.414E+03
3	0.288E+03
2	0.161E+03
1	0.349E+02

Min = 3.495153E+01
Max = 1.298241E+03
Min ID= 1191
Max ID= 1439
Contour_3:
Stress Tensor

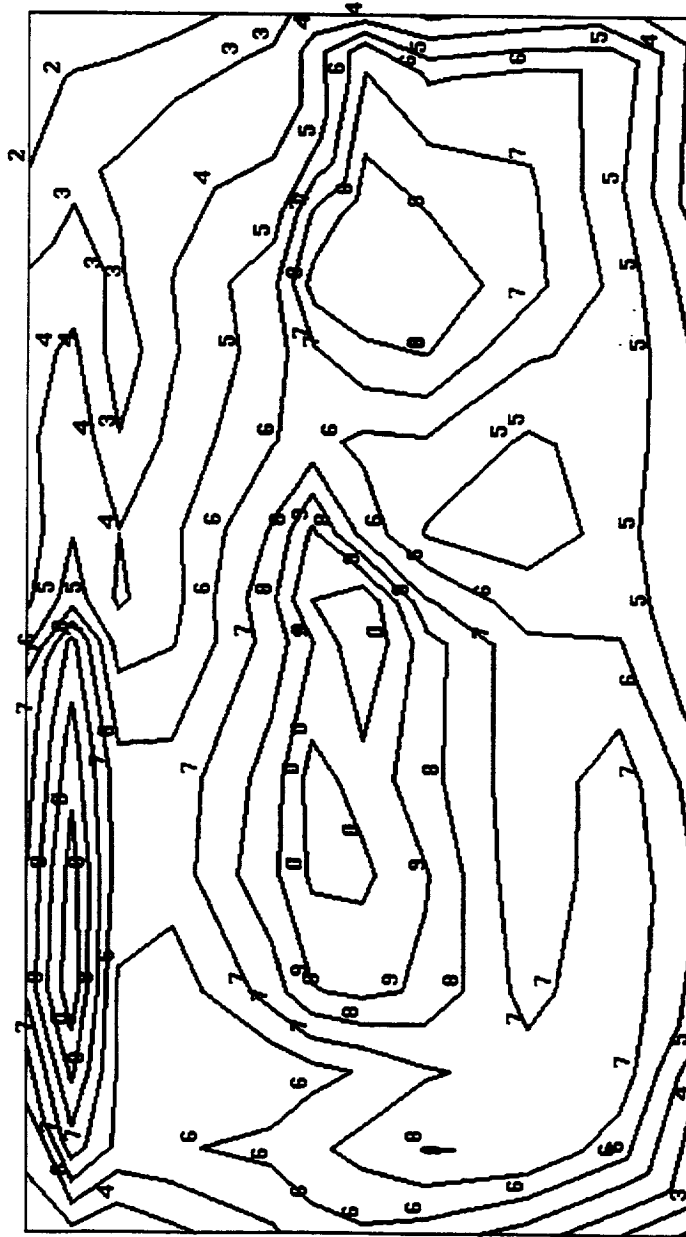
Von Mises
At 21

Design_By=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1
Lower Right Panel



Metsat AMSU-A1
Lower Right Panel



Time: 14:02:49
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.105E+04
—	9	0.939E+03
—	8	0.826E+03
—	7	0.714E+03
—	6	0.601E+03
—	5	0.489E+03
—	4	0.376E+03
—	3	0.263E+03
—	2	0.151E+03
—	1	0.383E+02

Min = 3.834559E+01

Max = 1.164038E+03

Min ID= 1455

Max ID= 1369

Contour_4:

Stress Tensor

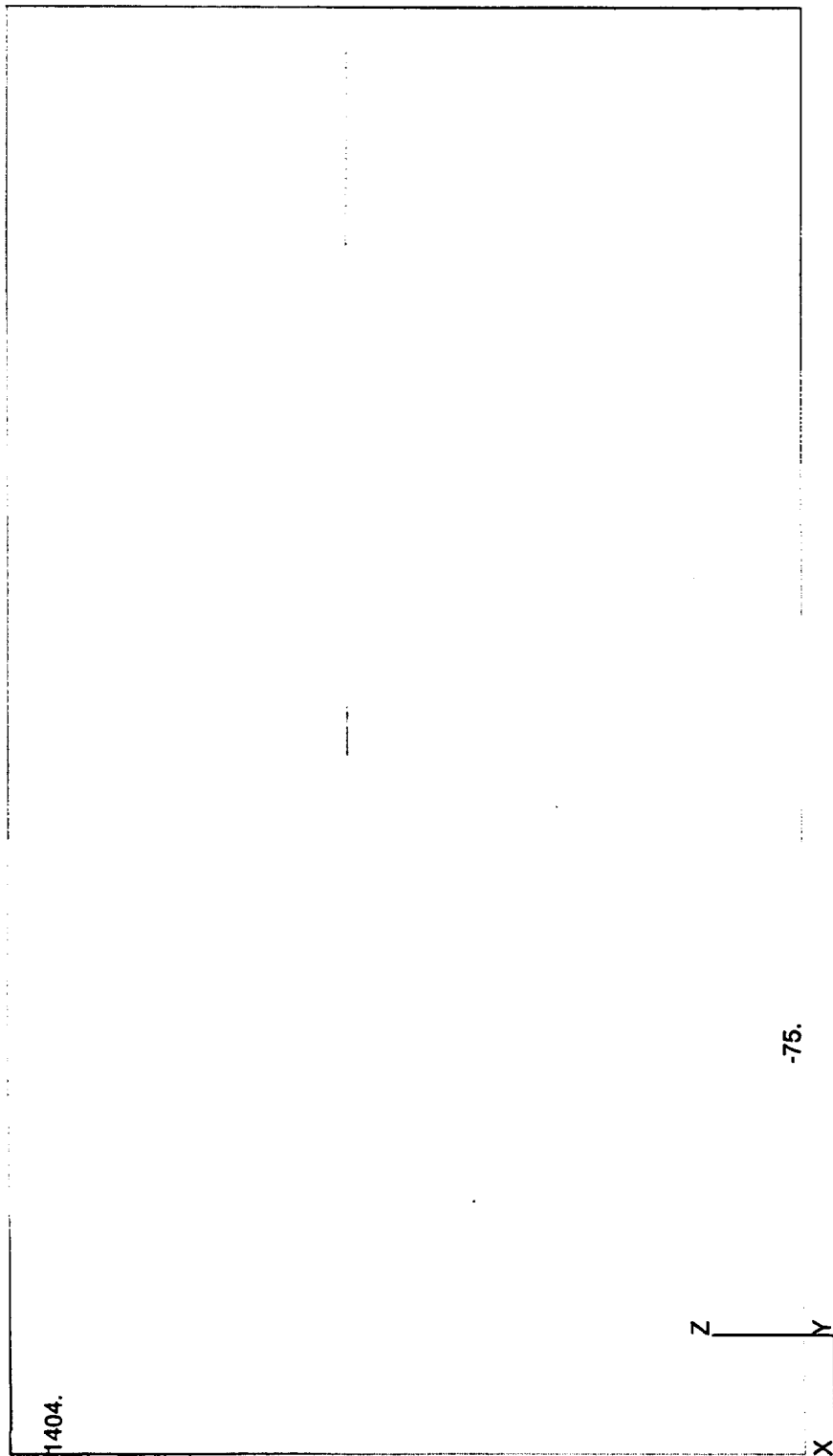
Von Mises

At Z2

Design_0y=-20.6_0x=-21.2
Static Subcase

FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:29:00

Lower Right Panel Beams



-75.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

1404.

1305.

1207.

1108.

1010.

911.

812.

714.

615.

517.

418.

319.

221.

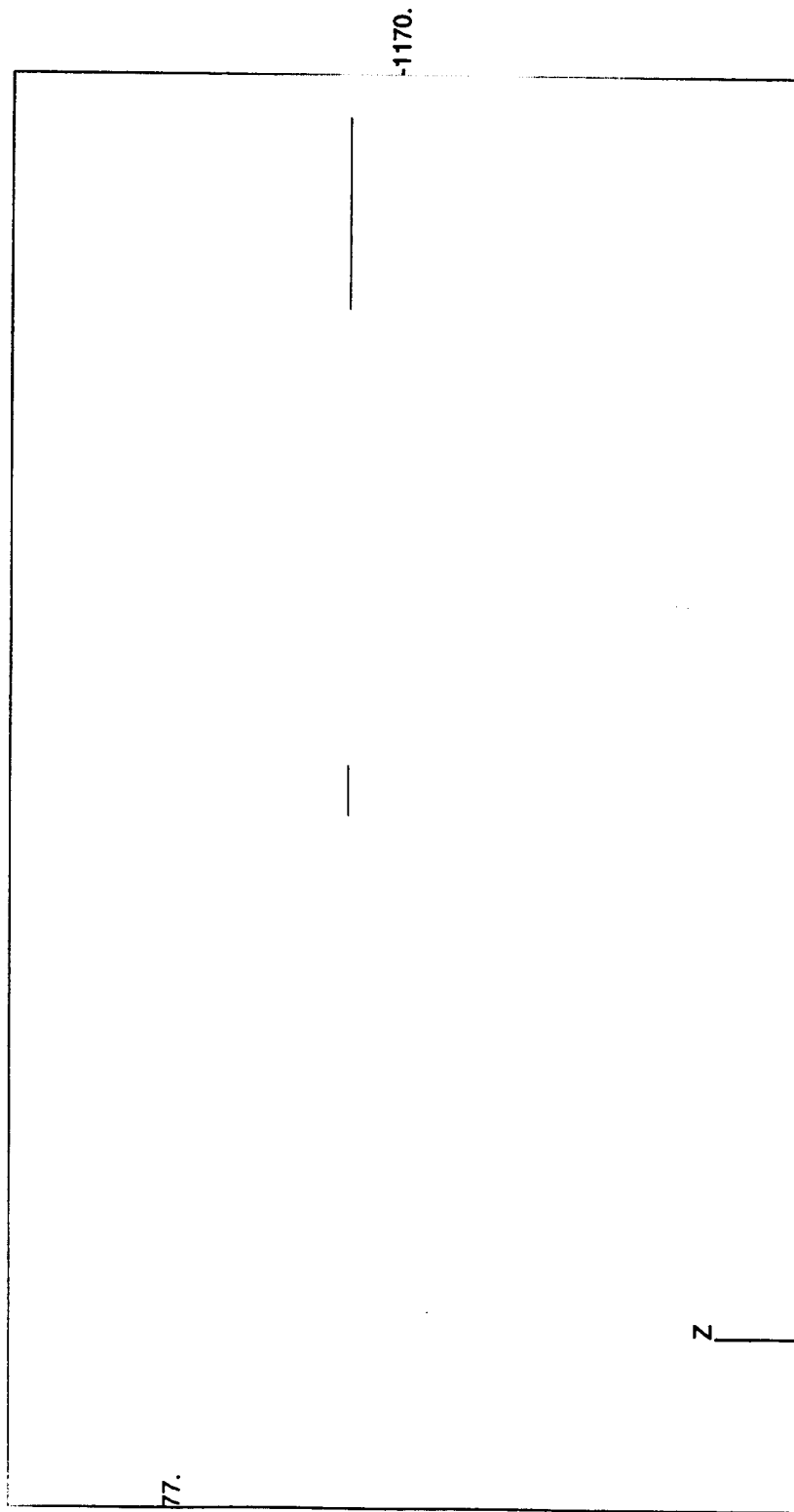
122.

24.

-75.

FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:19:54

Lower Right Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

77.
-6.
-89.
-172.
-256.
-339.
-422.
-505.
-588.
-671.
-754.
-838.
-921.
-1004.
-1087.
-1170.

Time: 14:24:21
Date: 02/29/96

Contour
Node Scalar1

Color Index

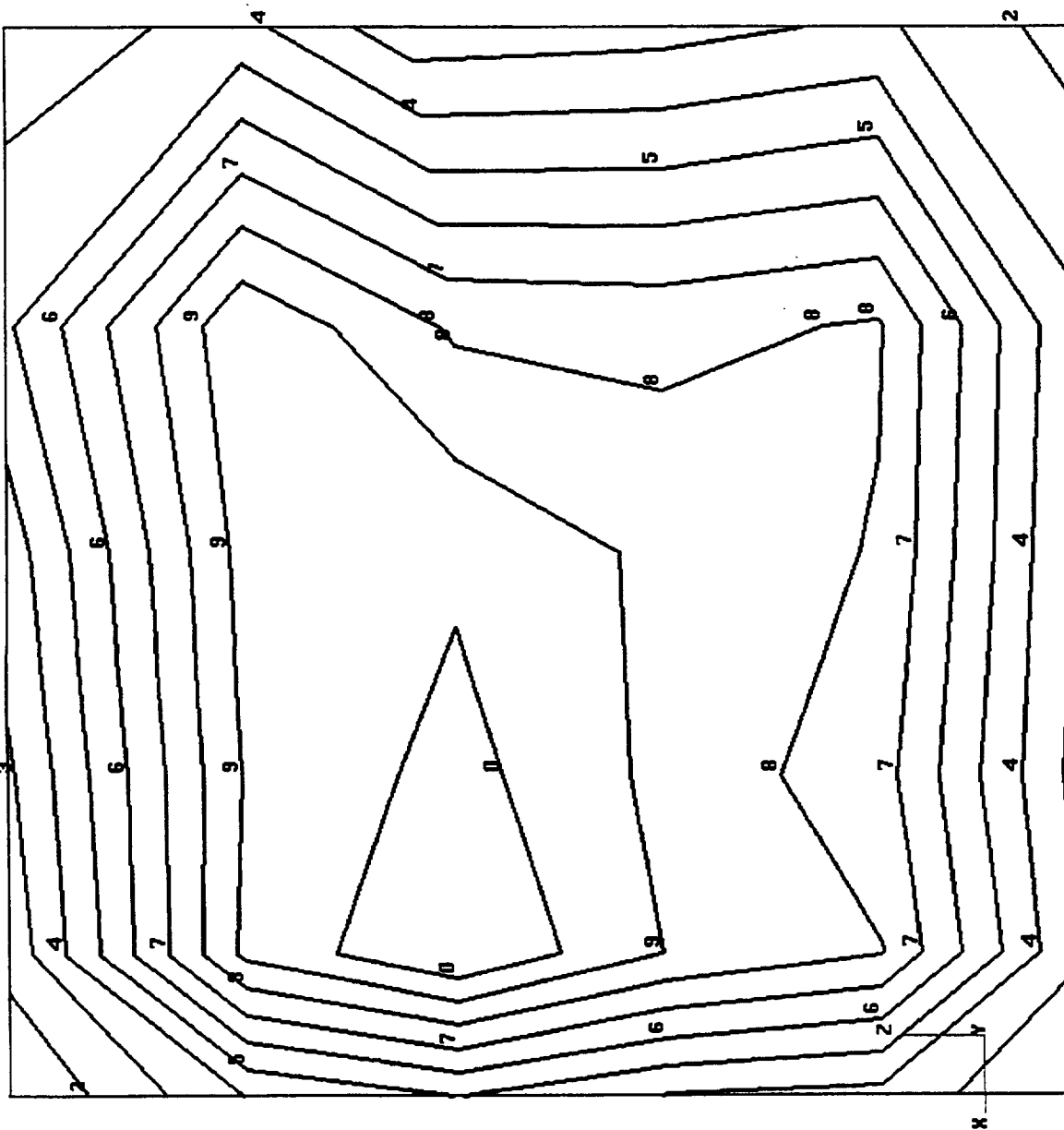
0	0.839E+03
1	0.766E+03
2	0.693E+03
3	0.620E+03
4	0.547E+03
5	0.474E+03
6	0.401E+03
7	0.328E+03
8	0.255E+03
9	0.182E+03

Min = 1.817911E+02
Max = 9.119210E+02
Min ID= 1998
Max ID= 2677
Contour_3:
Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1
Upper Right
Front Support



Time: 14:26:31
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.827E+03
1	0.749E+03
2	0.672E+03
3	0.594E+03
4	0.517E+03
5	0.439E+03
6	0.362E+03
7	0.284E+03
8	0.207E+03
9	0.129E+03

Min = 1.29090E+02

Max = 9.044674E+02

Min ID= 1998

Max ID= 2685

Contour_4:

Stress Tensor

Von Mises

At 22

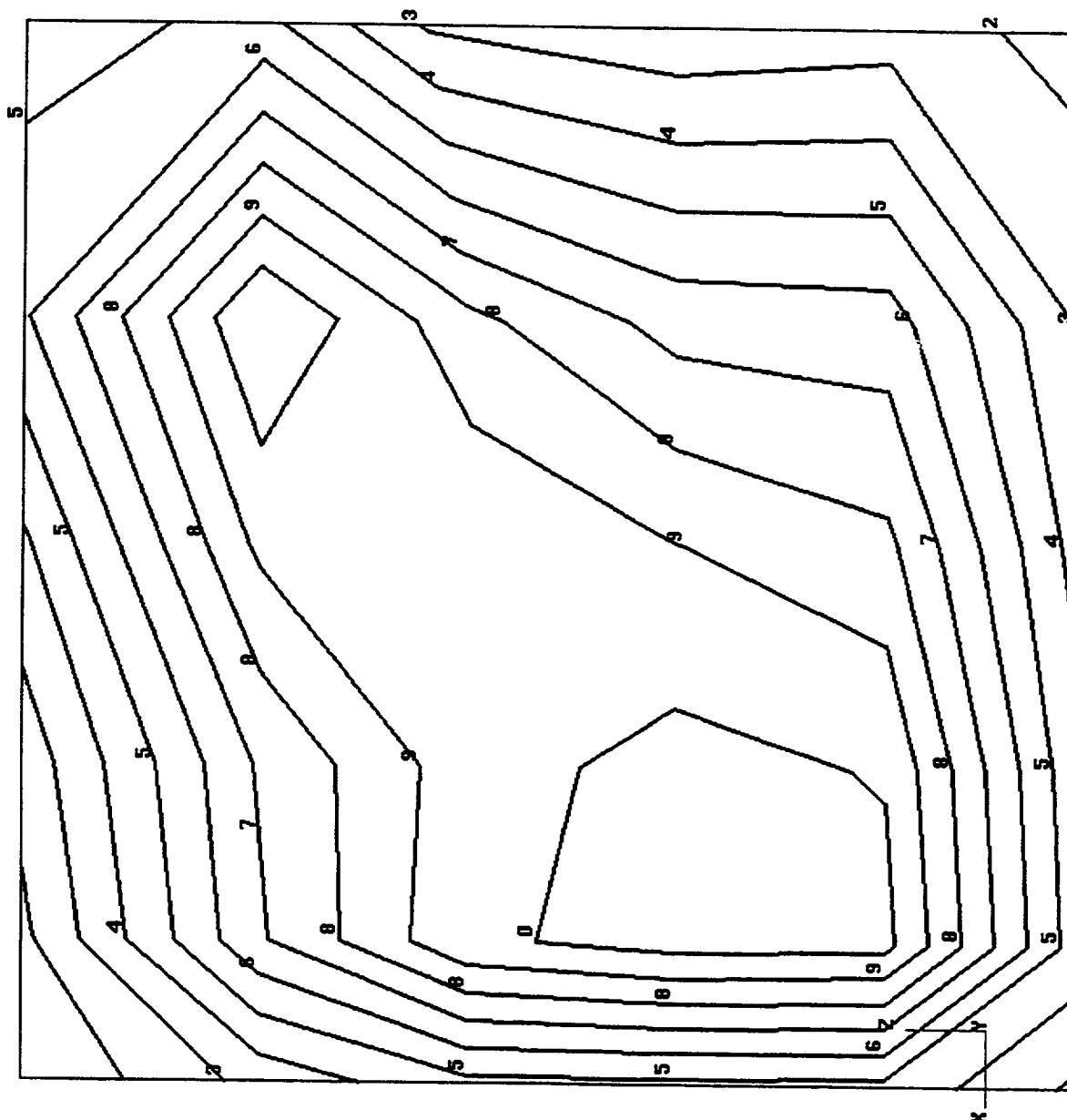
Design_Gy=-20.6_ax=-21.2

Static Subcase

Metsat AMSU-A1

Upper Right

Front Support



FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:25:04
Upper Right Front Support Beams

2122.

2122.

1983.

1845.

1707.

1569.

1431.

1292.

1154.

1016.

878.

740.

601.

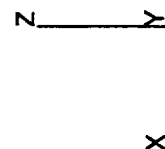
463.

325.

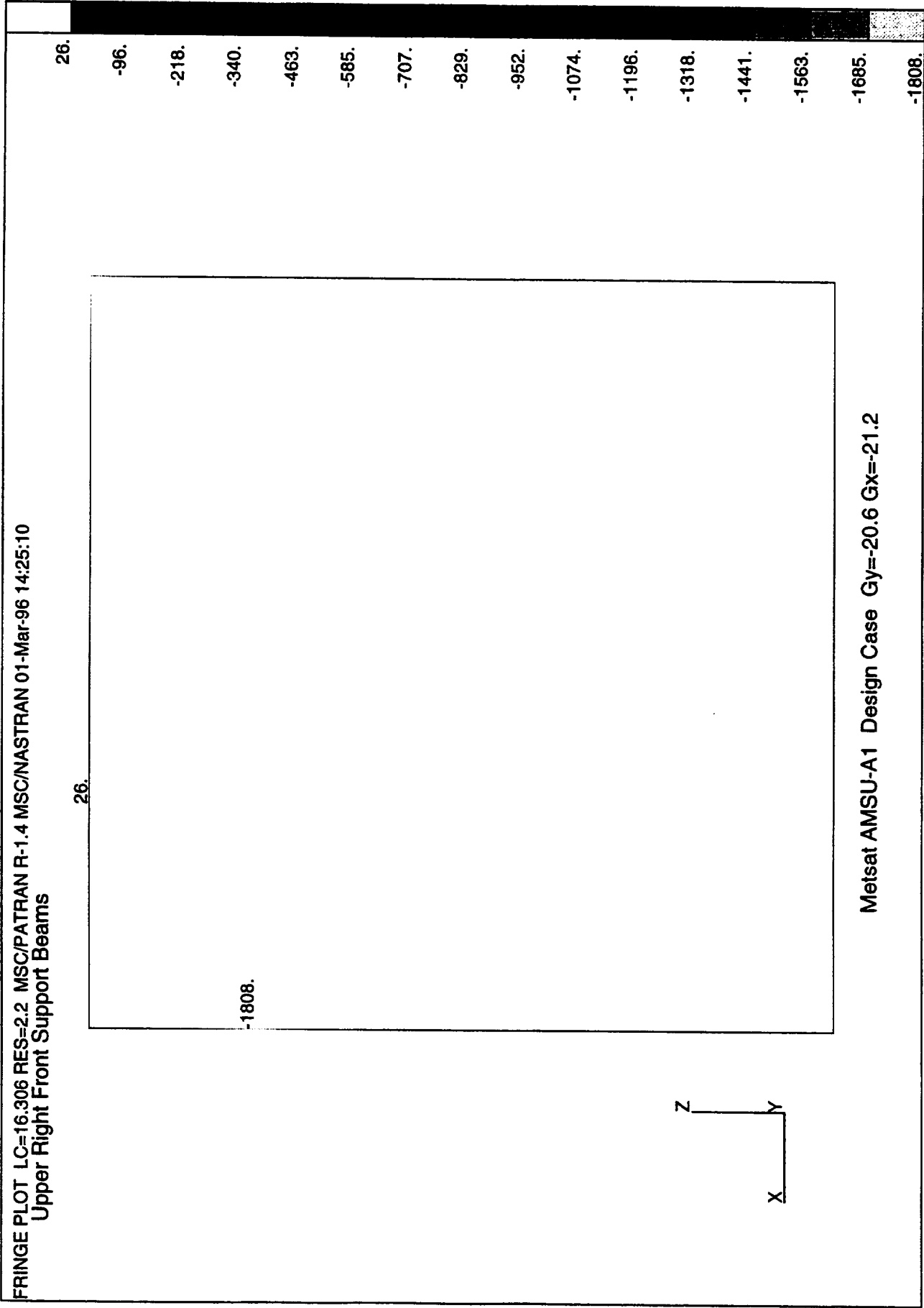
187.

49.

49.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2



Time: 14:43:25
Date: 02/29/96

Contour
Node Scalar1

Color Index

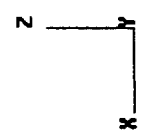
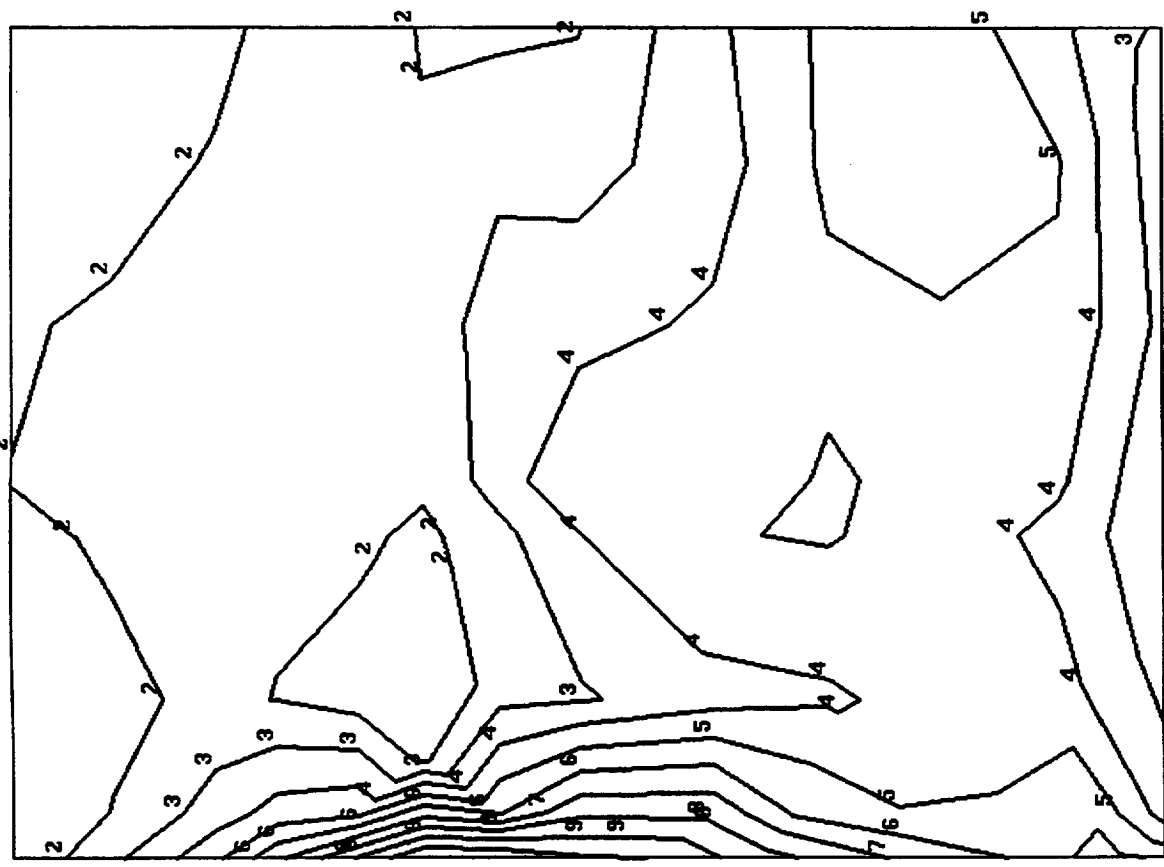
—	0	0.155E+04
—	9	0.138E+04
—	8	0.122E+04
—	7	0.105E+04
—	6	0.885E+03
—	5	0.720E+03
—	4	0.554E+03
—	3	0.389E+03
—	2	0.224E+03
—	1	0.586E+02

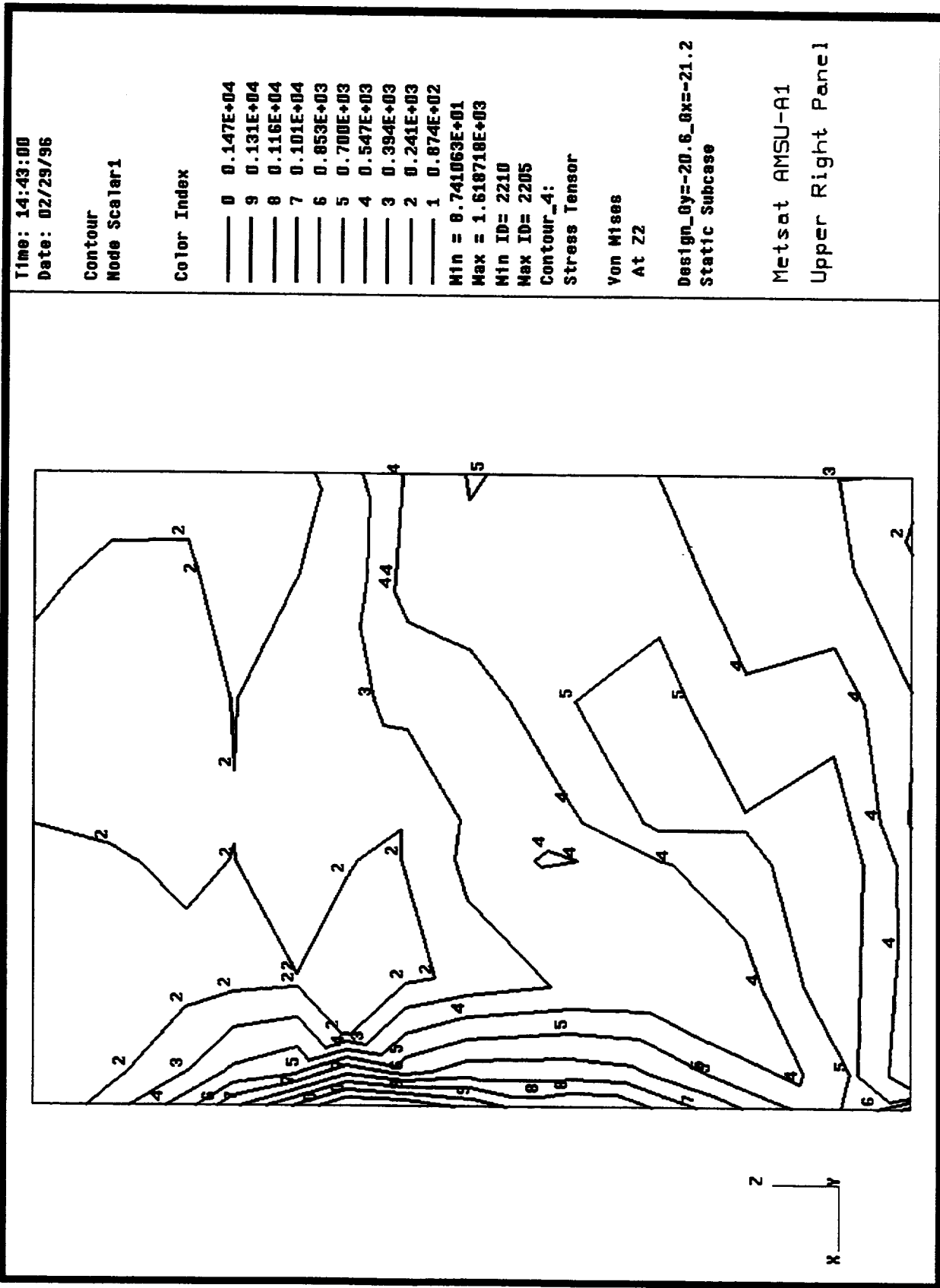
Min = 5.860352E+01
Max = 1.711111E+03
Min ID= 1993
Max ID= 2204
Contour_3:
Stress Tensor

Von Mises
At Z1

Design_Oy=-20.6_Ox=-21.2
Static Subcase

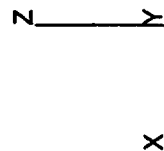
Metsat AMSU-A1
Upper Right Panel





FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:18:37

Upper Right Panel Beams

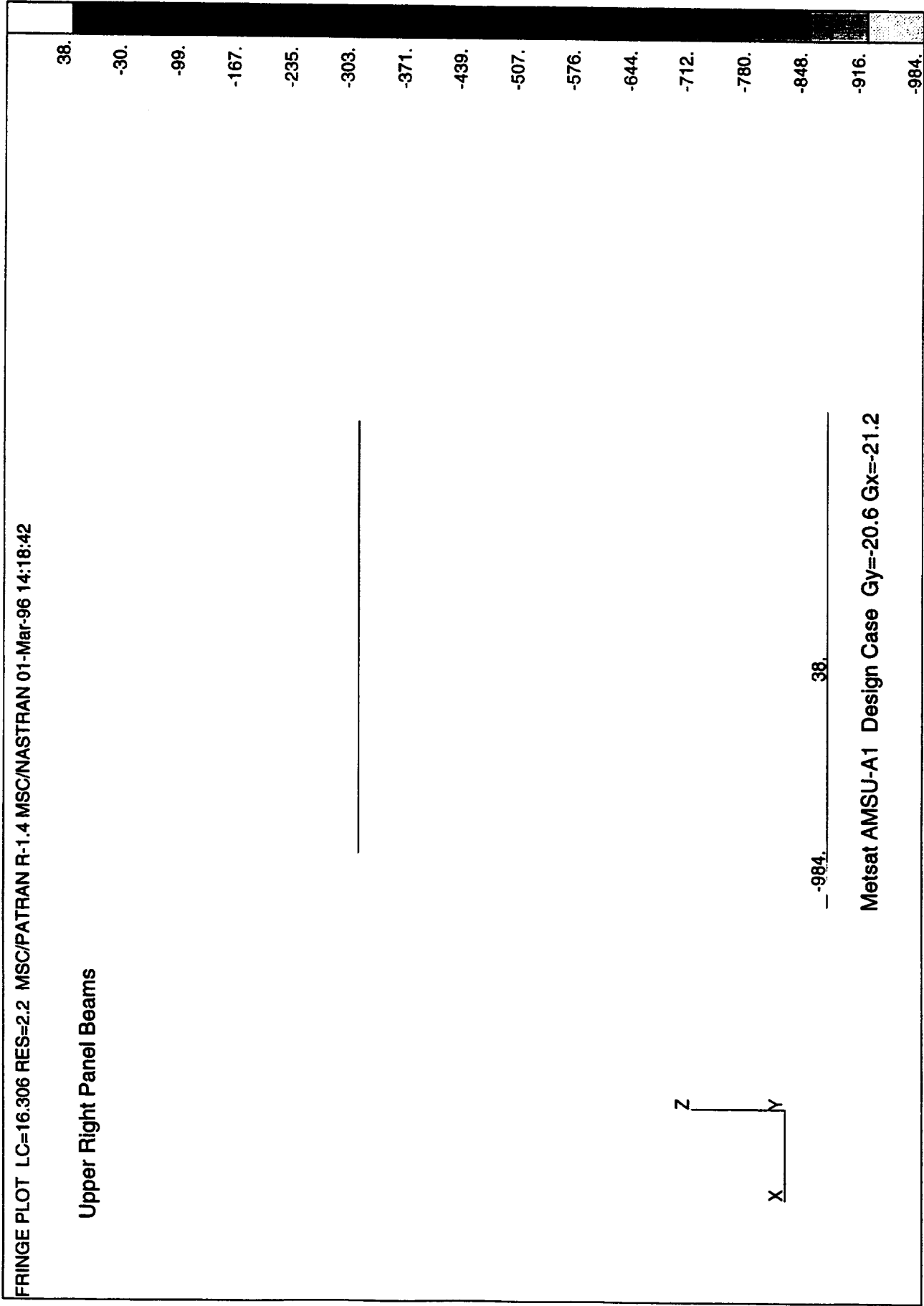


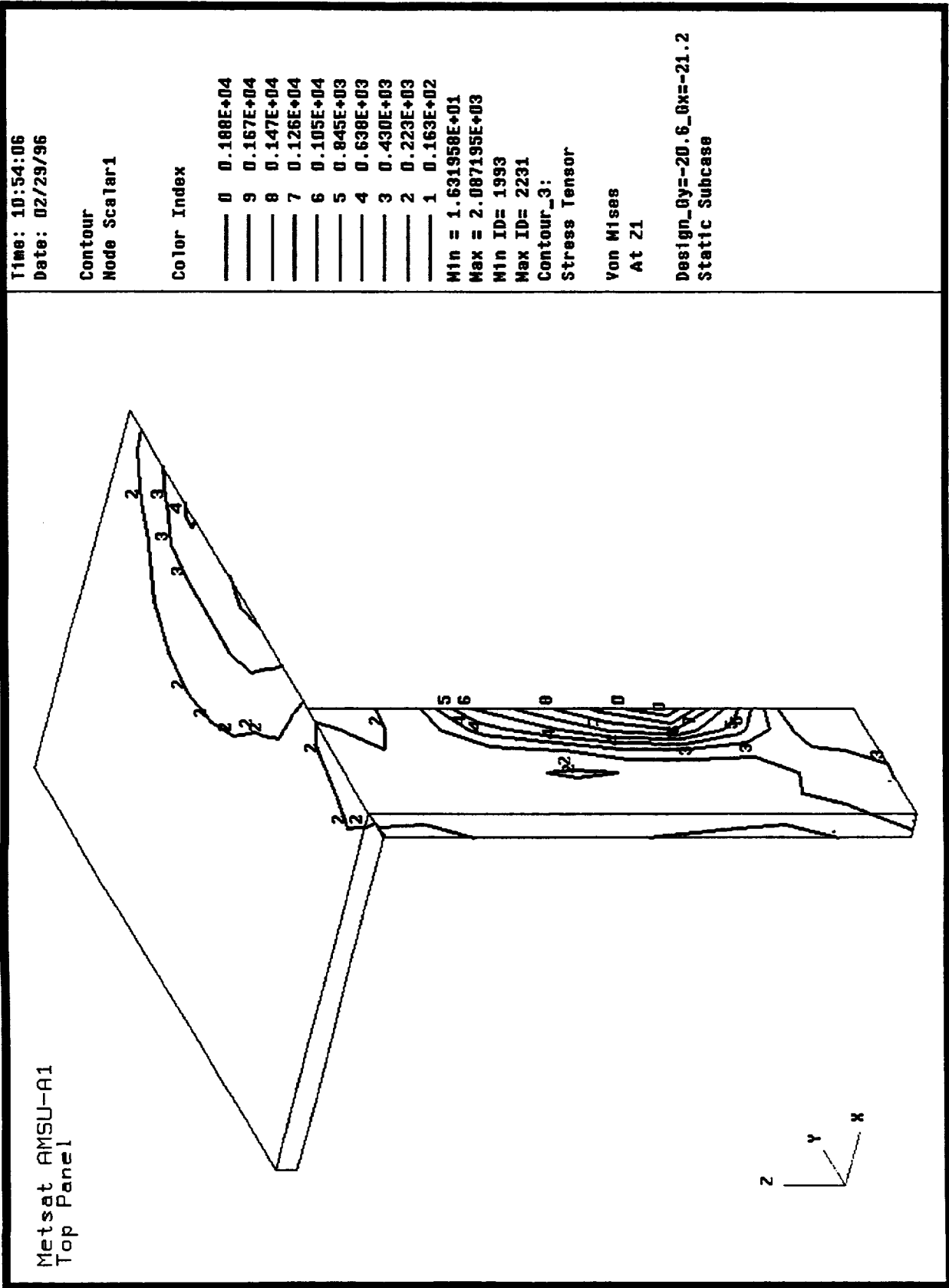
1341.

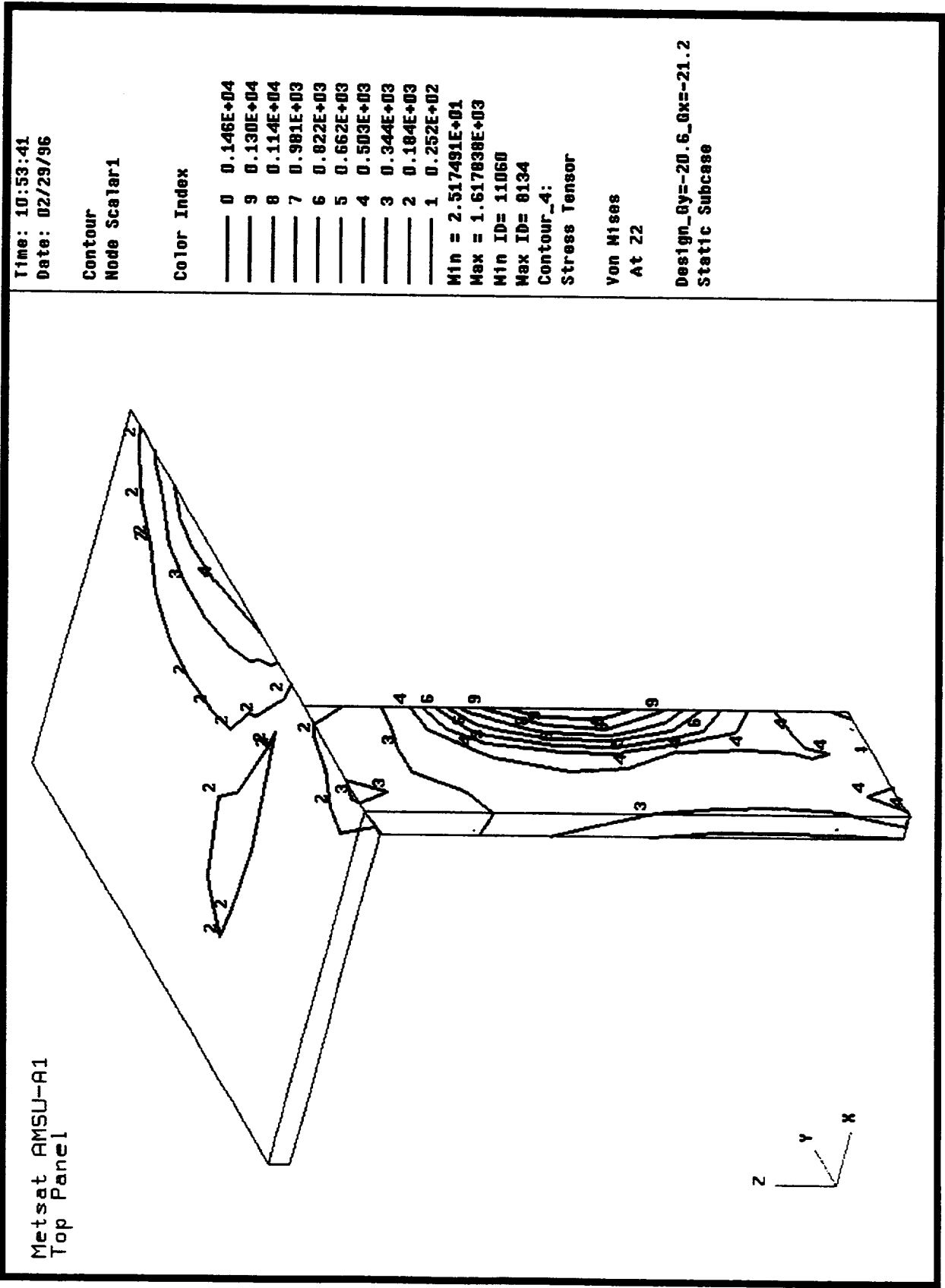
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

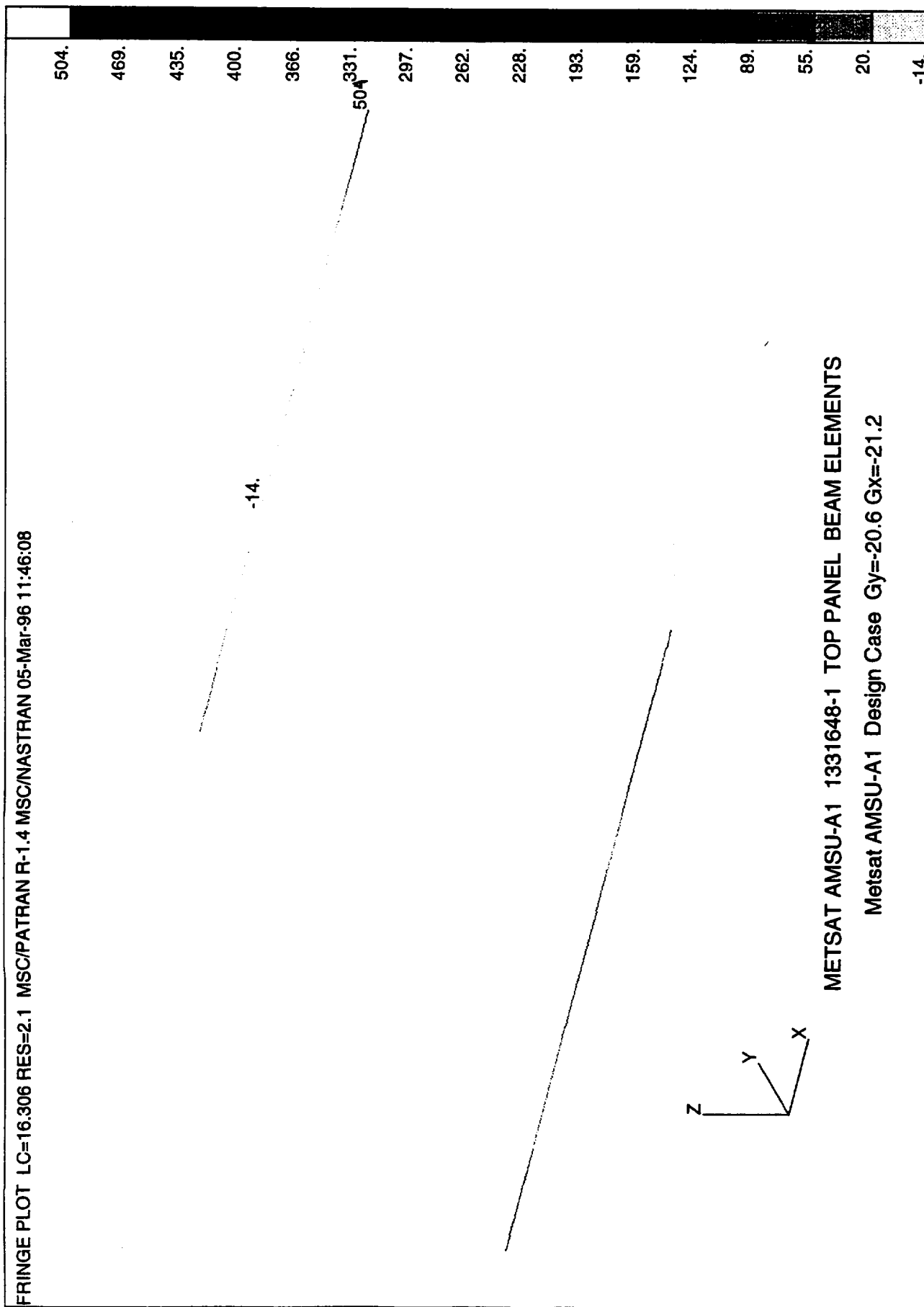
1341.
1251.
1162.
1072.
982.
893.
803.
714.
624.
534.
445.
355.
266.
176.
86.
-3.

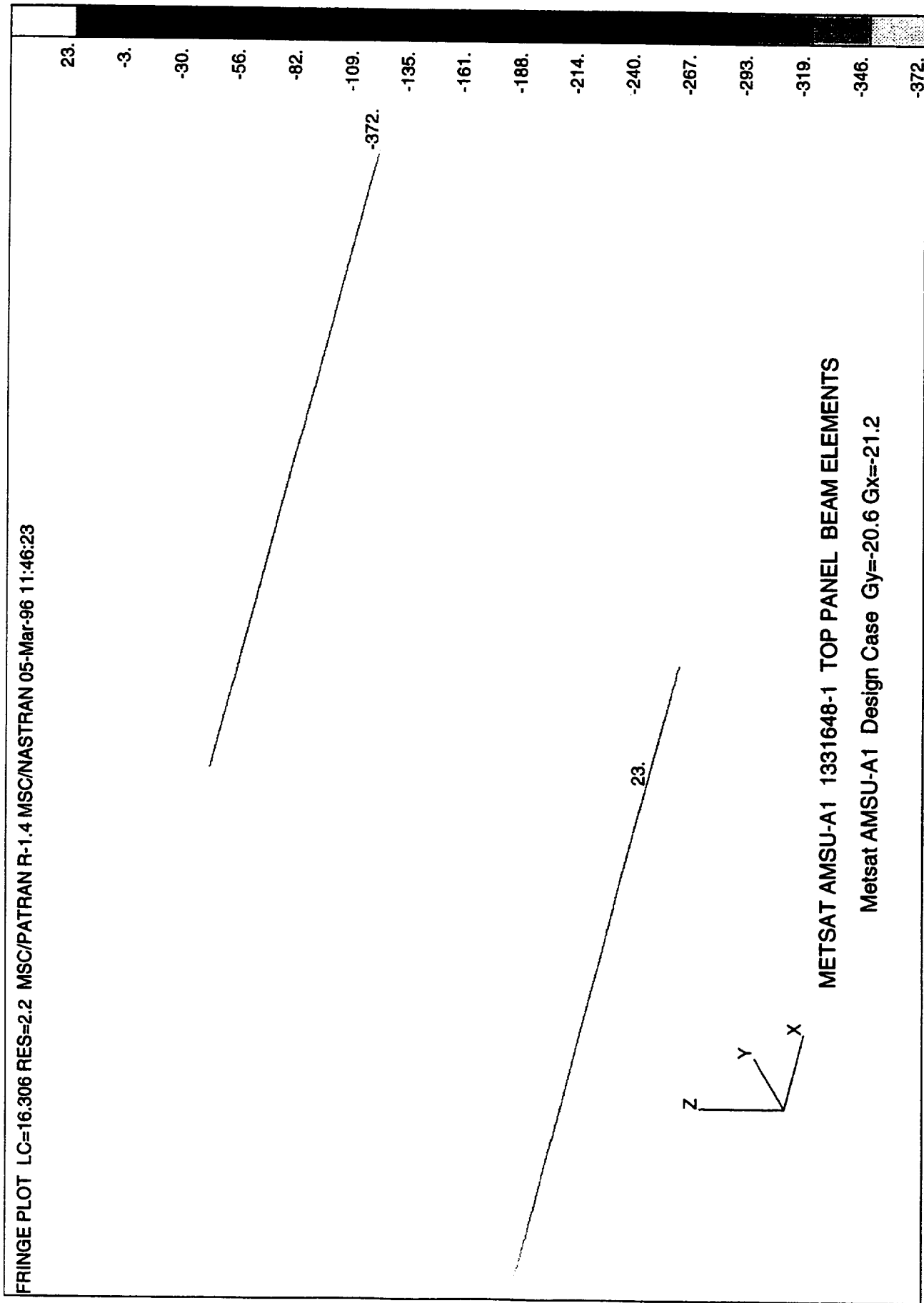
-3.







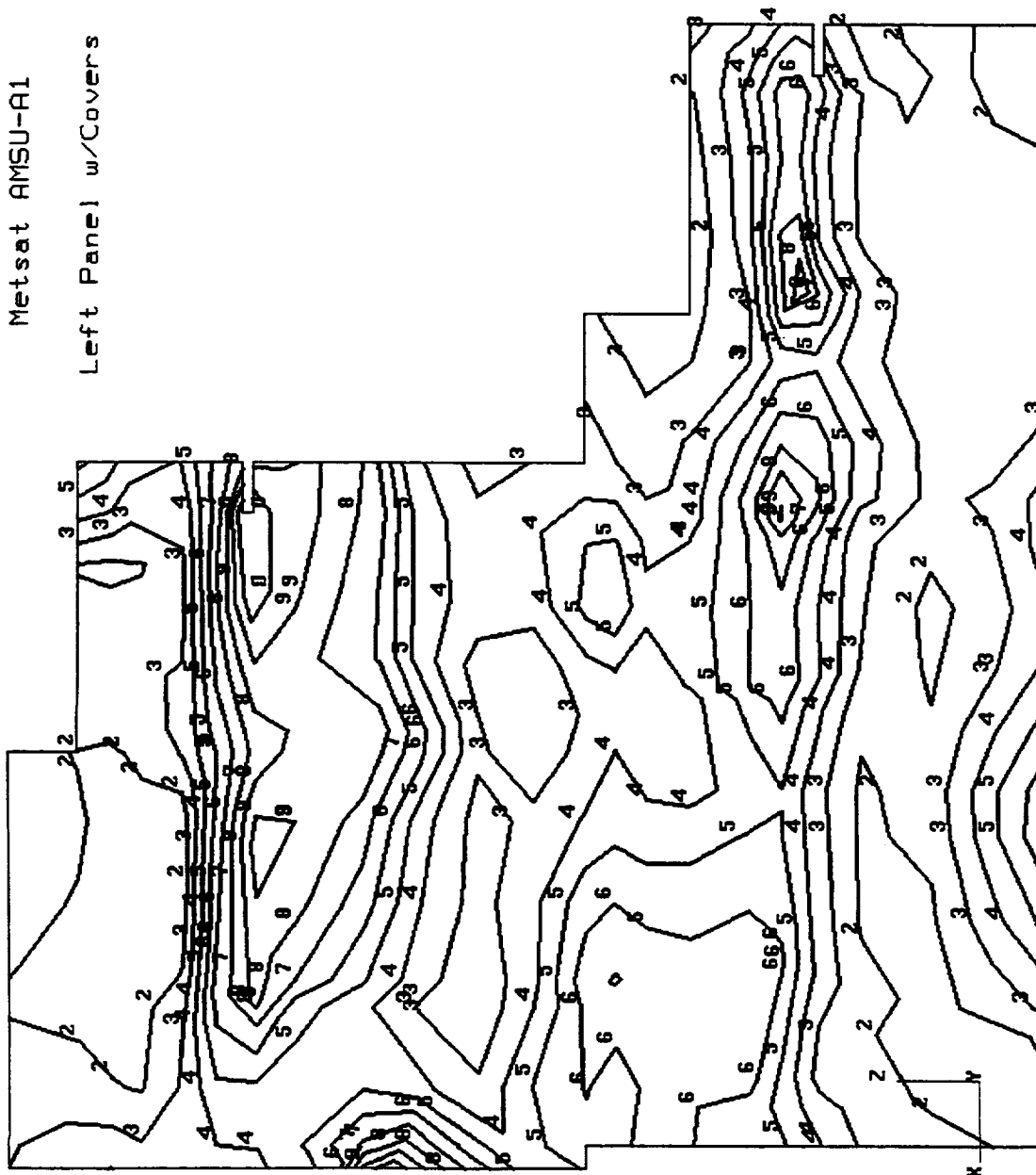




Time: 13:48:34
Date: 02/29/96

Metsat AMSU-A1

Left Panel w/Covers



Contour
Node Scalar1

Color Index

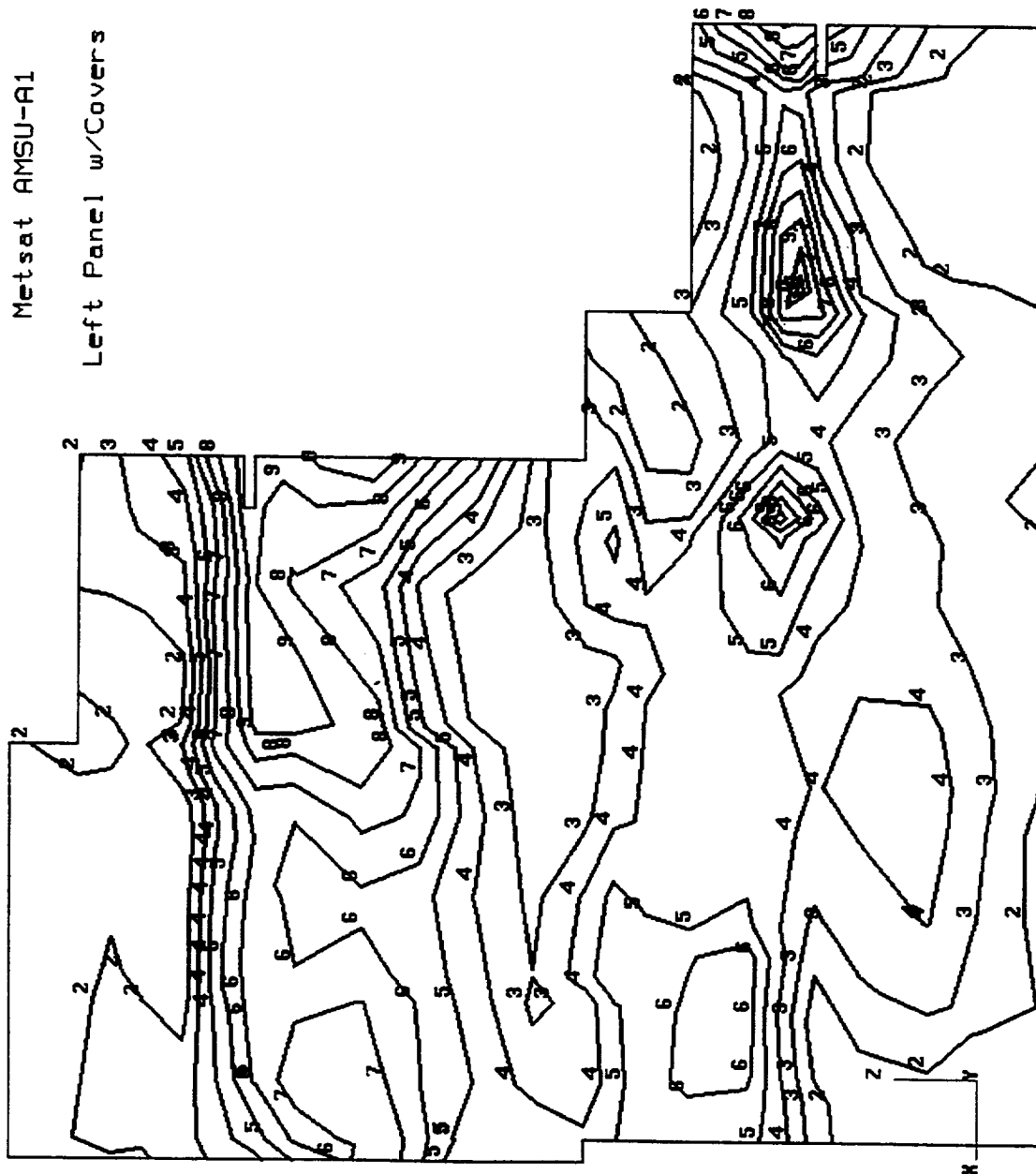
0	0.138E+04
9	0.123E+04
8	0.109E+04
7	0.937E+03
6	0.789E+03
5	0.640E+03
4	0.492E+03
3	0.343E+03
2	0.195E+03
1	0.465E+02

Min = 4.654519E+01
Max = 1.530918E+03
Min ID= 1001
Max ID= 3073
Contour_3:
Stress Tensor

Von Mises
At Z1

Design_Gy=-20.6_Gx=-21.2
Static Subcase

Metsat AMSU-A1
Left Panel w/Covers



Time: 13:52:33
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.142E+04
1	0.127E+04
2	0.112E+04
3	0.978E+03
4	0.831E+03
5	0.685E+03
6	0.538E+03
7	0.392E+03
8	0.245E+03
9	0.989E+02

Min = 9.890781E+01

Max = 1.563570E+03

Min ID= 1019

Max ID= 2746

Contour_4:

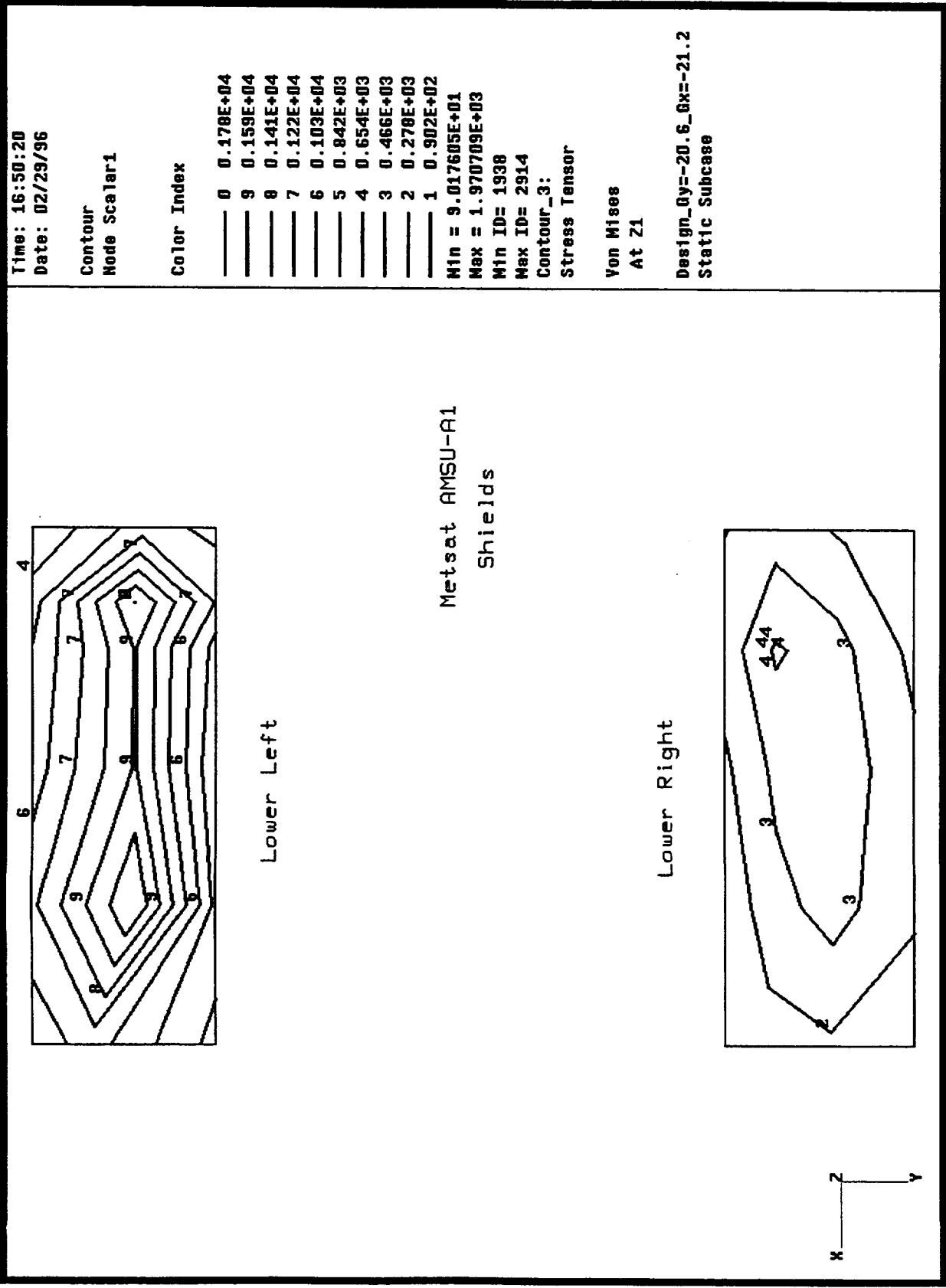
Stress Tensor

Von Mises

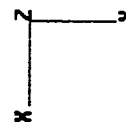
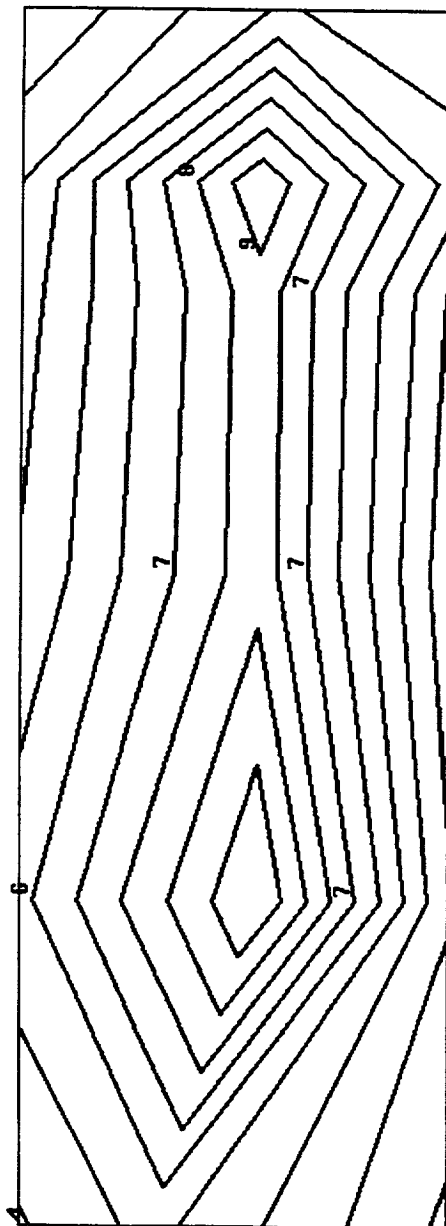
At 22

Design_Qy=-20.6_Qx=-21.2

Static Subcase



Metsat AMSU-A1
Lower Left Shield



Time: 16:20:53
Date: 02/28/96

Contour
Node Scalar1

Color Index

—	0	0.182E+04
—	9	0.167E+04
—	8	0.152E+04
—	7	0.137E+04
—	6	0.122E+04
—	5	0.107E+04
—	4	0.919E+03
—	3	0.789E+03
—	2	0.618E+03
—	1	0.469E+03

Min = 4.682099E+02

Max = 1.970709E+03

Min ID= 2829

Max ID= 2914

Contour_1:

Stress Tensor

Von Mises

At 21

Design_Gy=-20.6_Gx=-21.2
Static Subcase

Time: 16:20:05
Date: 02/28/96

Contour
Node Scalar1

Color Index

— 0	0.622E+03
— 9	0.563E+03
— 8	0.504E+03
— 7	0.445E+03
— 6	0.386E+03
— 5	0.326E+03
— 4	0.267E+03
— 3	0.208E+03
— 2	0.149E+03
— 1	0.902E+02

Min = 9.017605E+01

Max = 6.809052E+02

Min ID= 1938

Max ID= 2903

Contour_1:

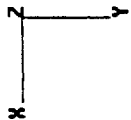
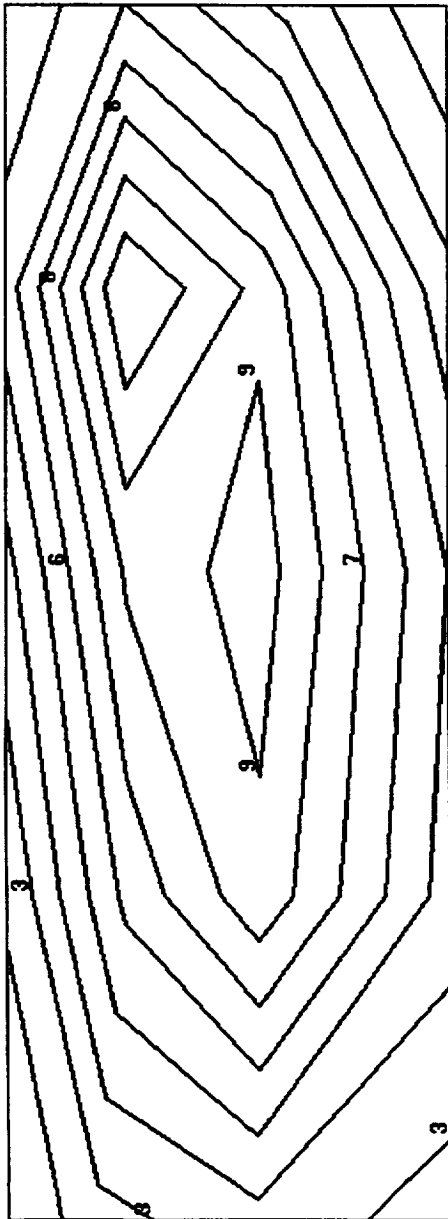
Stress Tensor

Von Mises

At Z1

Design_Qy=-20.6_Qx=-21.2
Static Subcase

Metsat AMSU-A1
Lower Right Shield



Time: 16:49:59
Date: 02/29/96

Contour
Node Scalar1

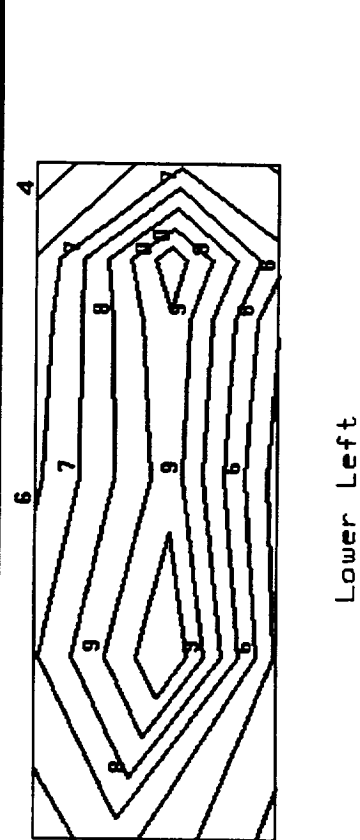
Color Index

—	0	0.178E+04
—	9	0.159E+04
—	8	0.140E+04
—	7	0.121E+04
—	6	0.101E+04
—	5	0.823E+03
—	4	0.632E+03
—	3	0.441E+03
—	2	0.250E+03
—	1	0.582E+02

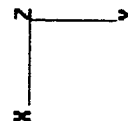
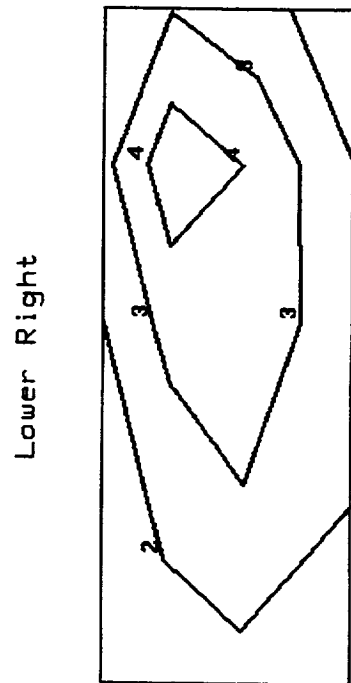
Min = 5.823204E+01
Max = 1.971315E+03
Min ID= 1938
Max ID= 2914
Contour_4:
Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0x=-21.2
Static Subcase



Metsat AMSU-A1
Shields



Time: 16:21:27
Date: 02/28/96

Contour
Node Scalar1

Color Index

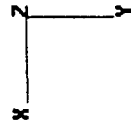
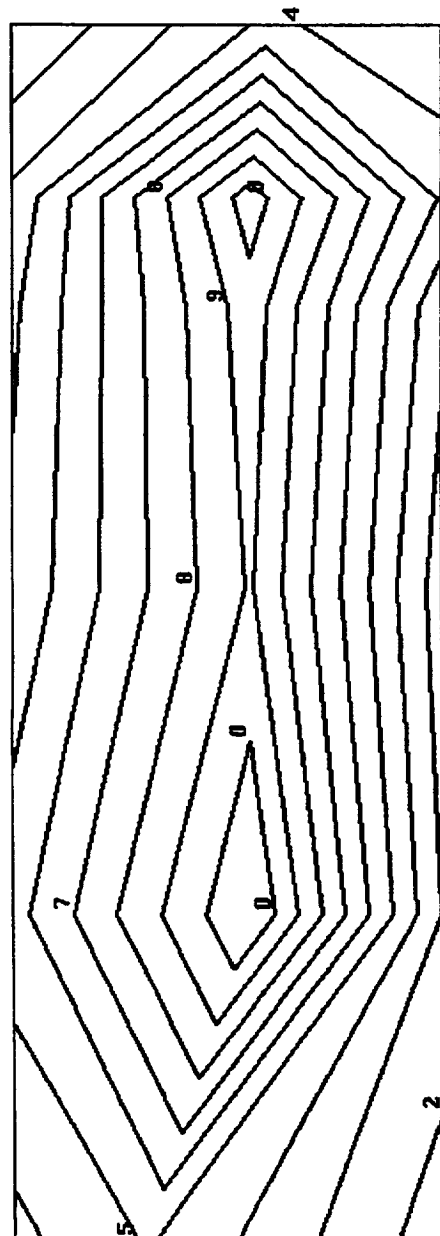
- 0 0.182E+04
- 9 0.168E+04
- 8 0.153E+04
- 7 0.138E+04
- 6 0.124E+04
- 5 0.109E+04
- 4 0.945E+03
- 3 0.799E+03
- 2 0.652E+03
- 1 0.506E+03

Min = 5.055531E+02
Max = 1.971315E+03
Min ID= 2829
Max ID= 2914
Contour_2:
Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1
Lower Left Shield



Time: 16:09:45
Date: 02/28/96

Contour
Node Scalar1

Color Index

— 0	0.694E+03
— 9	0.623E+03
— 8	0.552E+03
— 7	0.482E+03
— 6	0.411E+03
— 5	0.341E+03
— 4	0.270E+03
— 3	0.199E+03
— 2	0.129E+03
— 1	0.502E+02

Min = 5.823204E+01

Max = 7.641699E+02

Min ID= 1938

Max ID= 2903

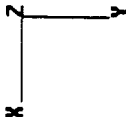
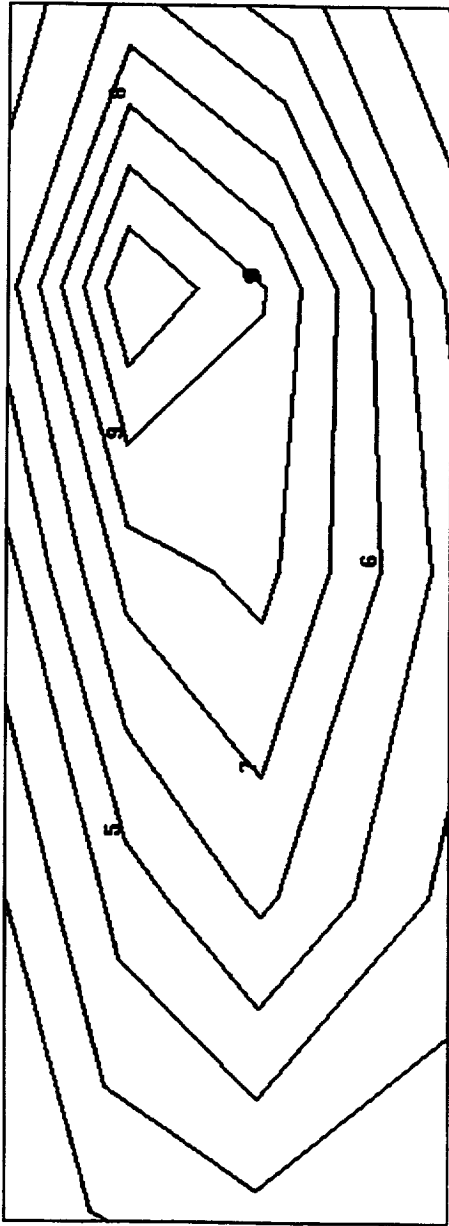
Contour_2:

Stress Tensor

Von Mises
At 22

Design_Qy=-20.6_Qx=-21.2
Static Subcase

Metsat AMSU-A1
Lower Right Shield

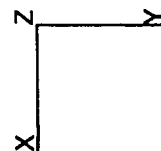


FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:31:29

Lower Left Shield Beams

-238.

3580.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

3580.

3326.

3071.

2817.

2562.

2308.

2053.

1798.

1544.

1289.

1035.

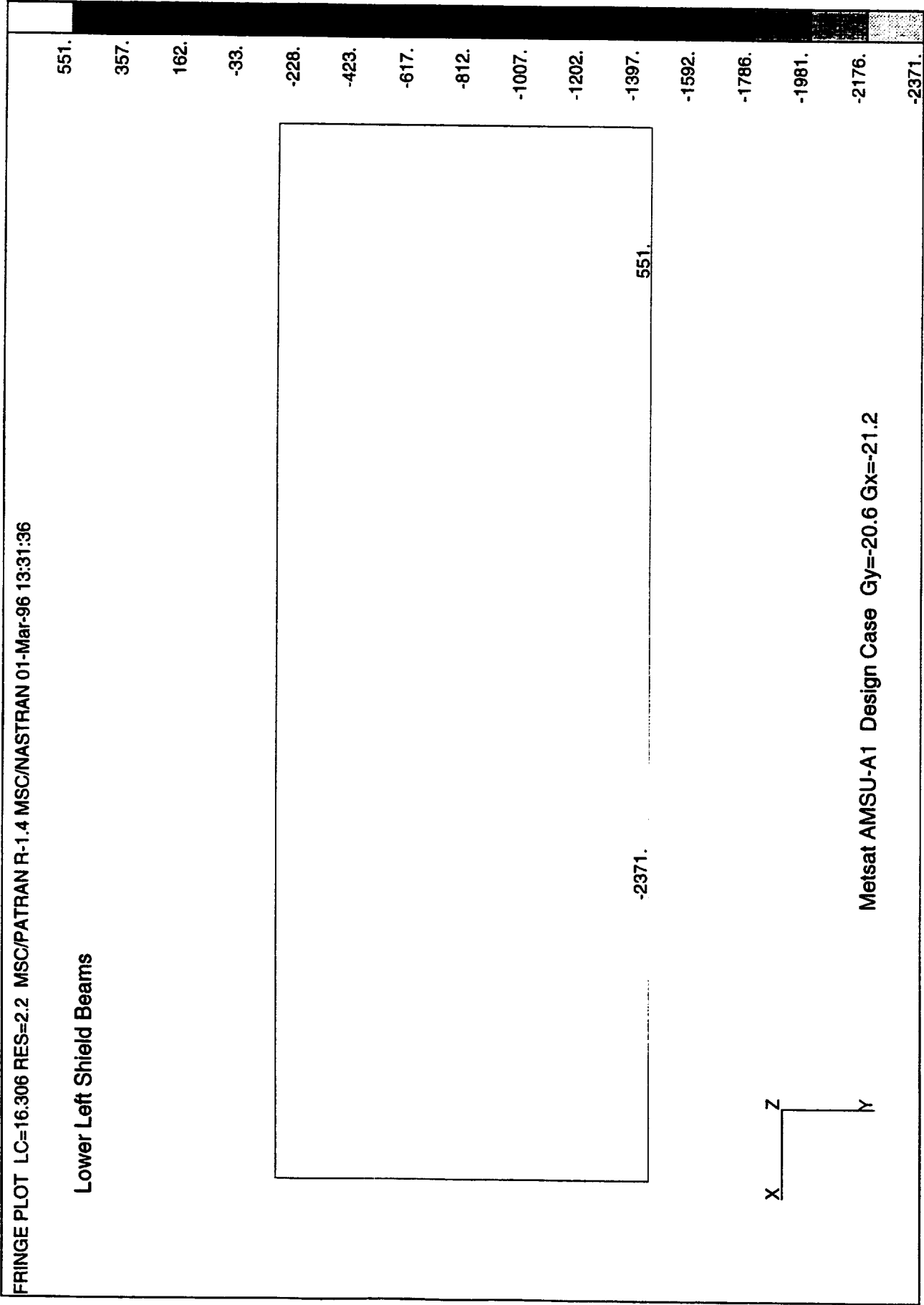
780.

525.

271.

16.

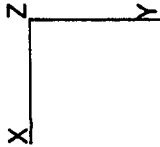
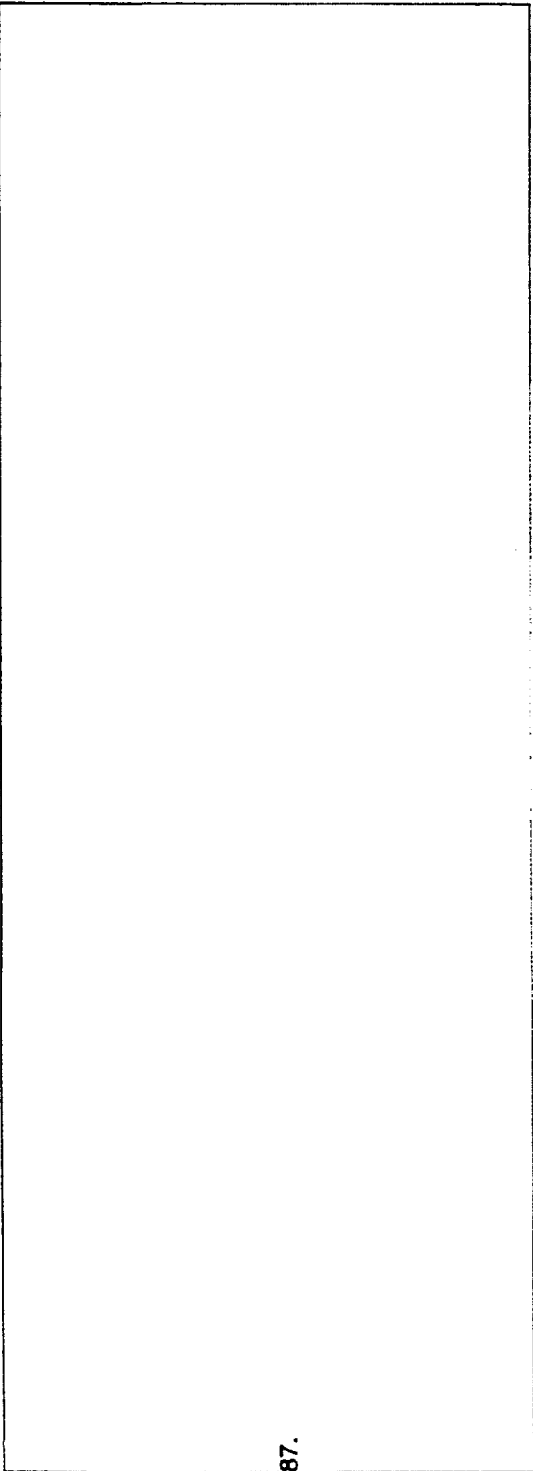
-238.



FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:26:22

Lower Right Shield Beams

3541.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

3541.

3311.

3081.

2850.

2620.

2390.

2160.

1929.

1699.

1469.

1239.

1008.

778.

548.

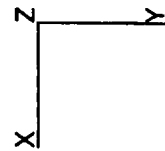
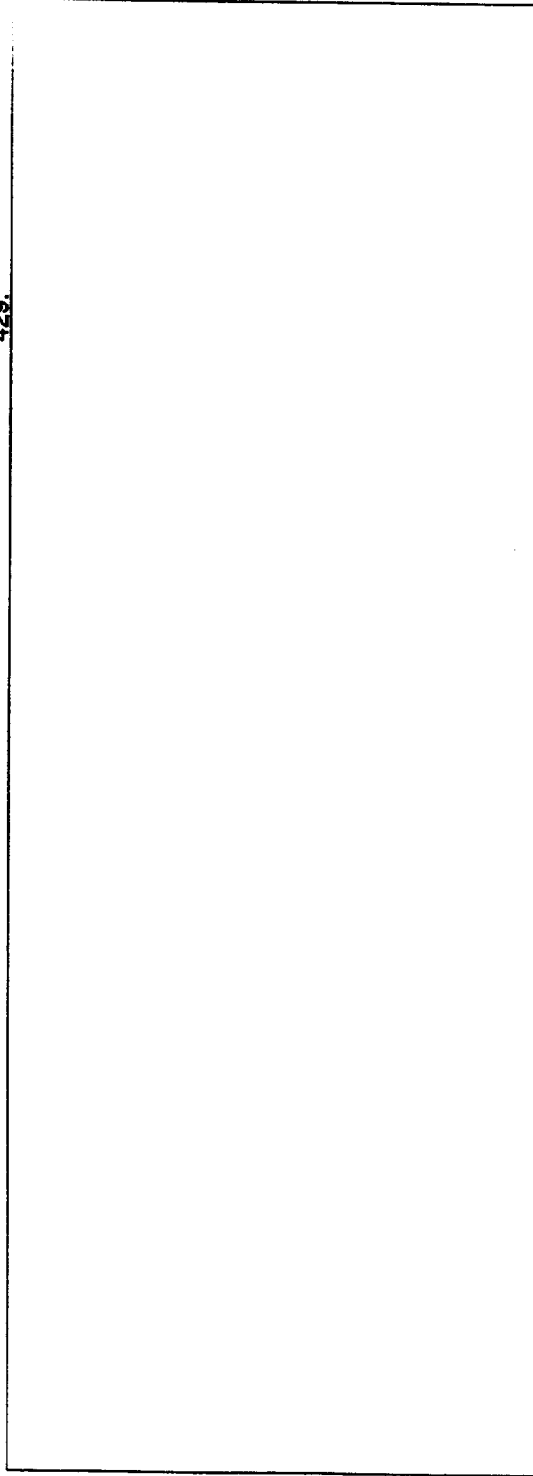
318.

87.

FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:26:37

Lower Right Shield Beams

429. -2146



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

429.
257.
86.
-86.
-258.
-429.
-601.
-773.
-944.
-1116.
-1288.
-1459.
-1631.
-1803.
-1974.
-2146.

Time: 17:02:21
Date: 02/29/96

Contour
Node Scalar1

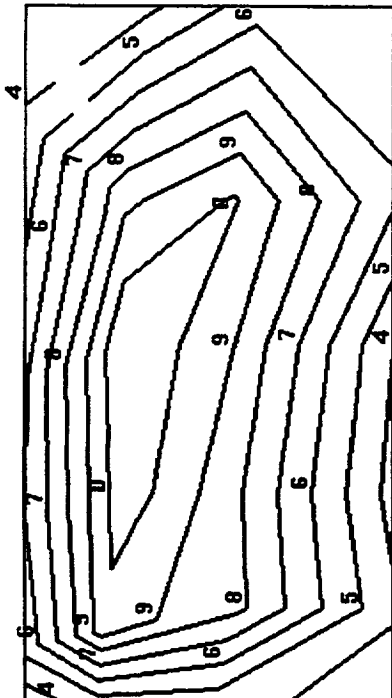
Color Index

—	0	0.121E+04
—	9	0.108E+04
—	8	0.954E+03
—	7	0.824E+03
—	6	0.695E+03
—	5	0.566E+03
—	4	0.437E+03
—	3	0.308E+03
—	2	0.179E+03
—	1	0.496E+02

Min = 4.963363E+01
Max = 1.340899E+03
Min ID= 1998
Max ID= 2929
Contour_4:
Stress Tensor

Von Mises
At 22

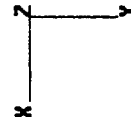
Design_Qy=-20.6_Qx=-21.2
Static Subcase



Upper Left

Metsat AMSU-A1
Shields

Upper Right



Time: 16:23:19
Date: 02/28/96

Contour
Node Scalar1

Color Index

---	0	0.124E+04
---	9	0.113E+04
---	8	0.103E+04
---	7	0.928E+03
---	6	0.825E+03
---	5	0.722E+03
---	4	0.619E+03
---	3	0.516E+03
---	2	0.412E+03
---	1	0.309E+03

Min = 3.092925E+02

Max = 1.340899E+03

Min ID= 2763

Max ID= 2929

Contour_2:

Stress Tensor

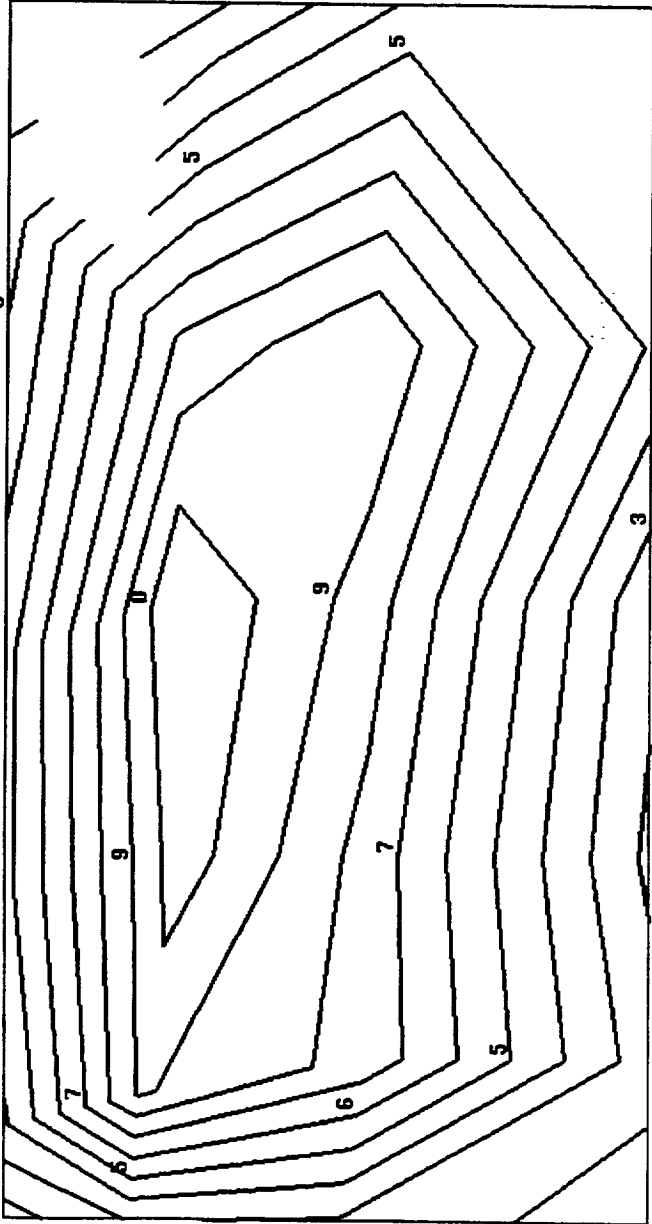
Von Mises

At 22

Design_0y=-20.6_0x=-21.2

Static Subcase

Metsat AMSU-A1
Upper Left Shield



x
z
y

Time: 16:27:41
Date: 02/28/96

Contour
Node Scalar2

Color Index

0	0.362E+03
9	0.327E+03
8	0.293E+03
7	0.258E+03
6	0.223E+03
5	0.189E+03
4	0.154E+03
3	0.119E+03
2	0.844E+02
1	0.496E+02

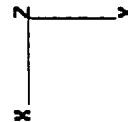
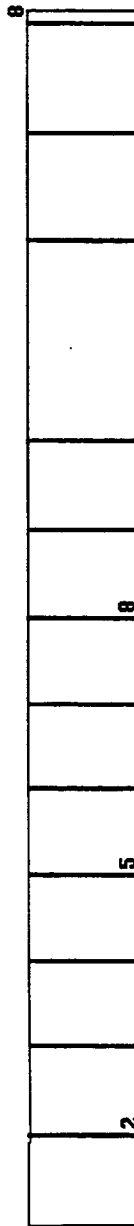
Min = 4.963363E+01
Max = 3.969581E+02
Min ID= 1998
Max ID= 2690

Contour_4:
Stress Tensor

Von Mises
At 22

Design_Qy=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1
Upper Right Shield



Time: 16:50:46
Date: 02/29/96

Contour
Mode Scalar1

Color Index	
0	0.113E+04
9	0.101E+04
8	0.890E+03
7	0.779E+03
6	0.655E+03
5	0.537E+03
4	0.420E+03
3	0.302E+03
2	0.184E+03
1	0.665E+02

Min = 6.655238E+01

Max = 1.243571E+03

Min ID= 1998

Max ID= 2929

Contour_3:

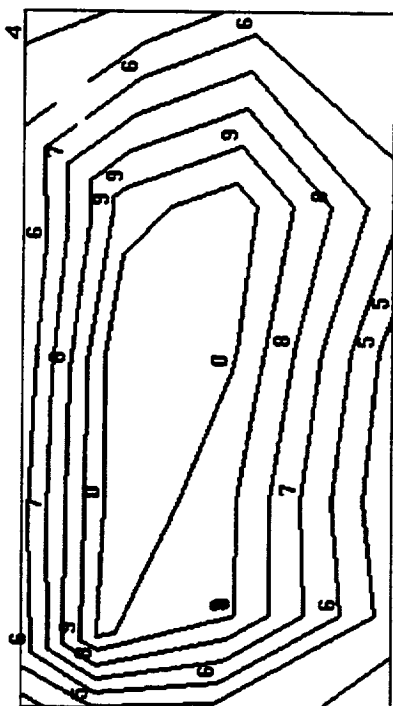
Stress Tensor

Von Mises

At 21

Design_0y=-20.6_0x=-21.2

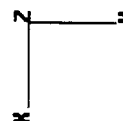
Static Subcase



Upper Left

Metsat AMSU-A1
Shields

Upper Right



Time: 16:25:05
Date: 02/28/96

Contour
Node Scalar1

Color Index

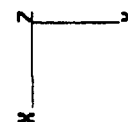
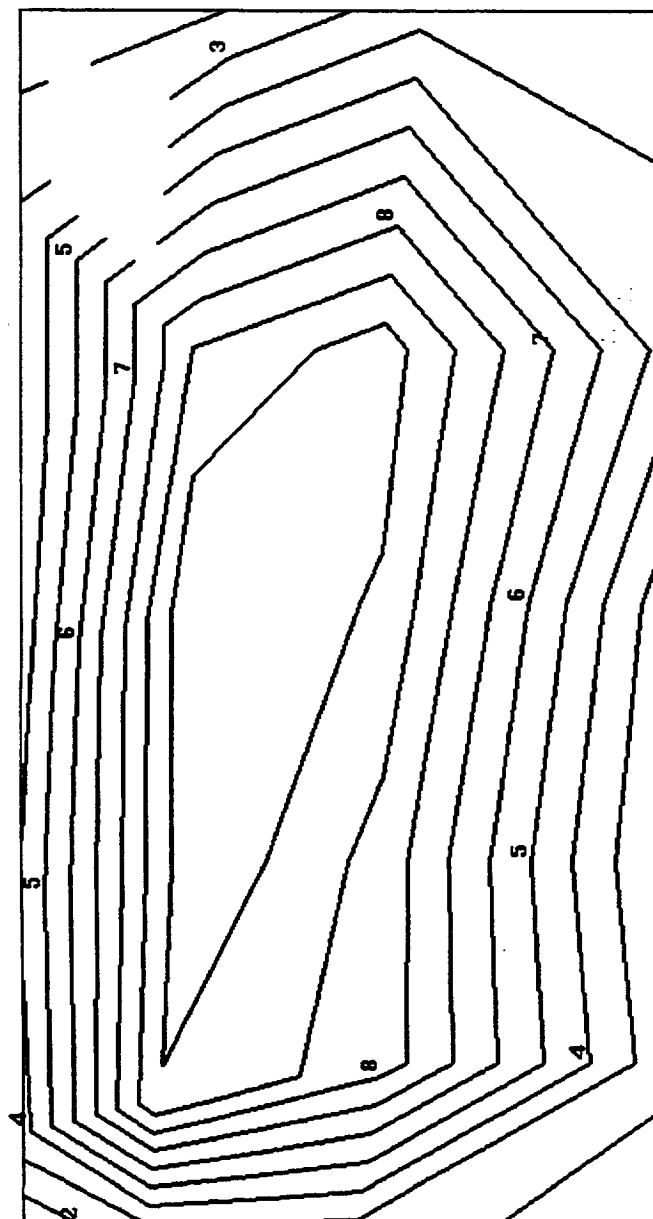
—	0	0.115E+04
—	9	0.107E+04
—	8	0.976E+03
—	7	0.887E+03
—	6	0.798E+03
—	5	0.708E+03
—	4	0.619E+03
—	3	0.530E+03
—	2	0.441E+03
—	1	0.352E+03

M1n = 3.515396E+02
Max = 1.243571E+03
M1n ID= 2083
Max ID= 2929
Contour_1:
Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1
Upper Left Shield



Metsat AMSU-A1
Upper Right Shield



Time: 16:26:30
Date: 02/28/96

Contour
Node Scalar1

Color Index

0	0.347E+03
9	0.316E+03
8	0.285E+03
7	0.254E+03
6	0.222E+03
5	0.191E+03
4	0.160E+03
3	0.129E+03
2	0.977E+02
1	0.665E+02

Min = 6.655230E+01

Max = 3.781713E+02

Min ID= 1998

Max ID= 2690

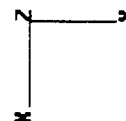
Contour_3:

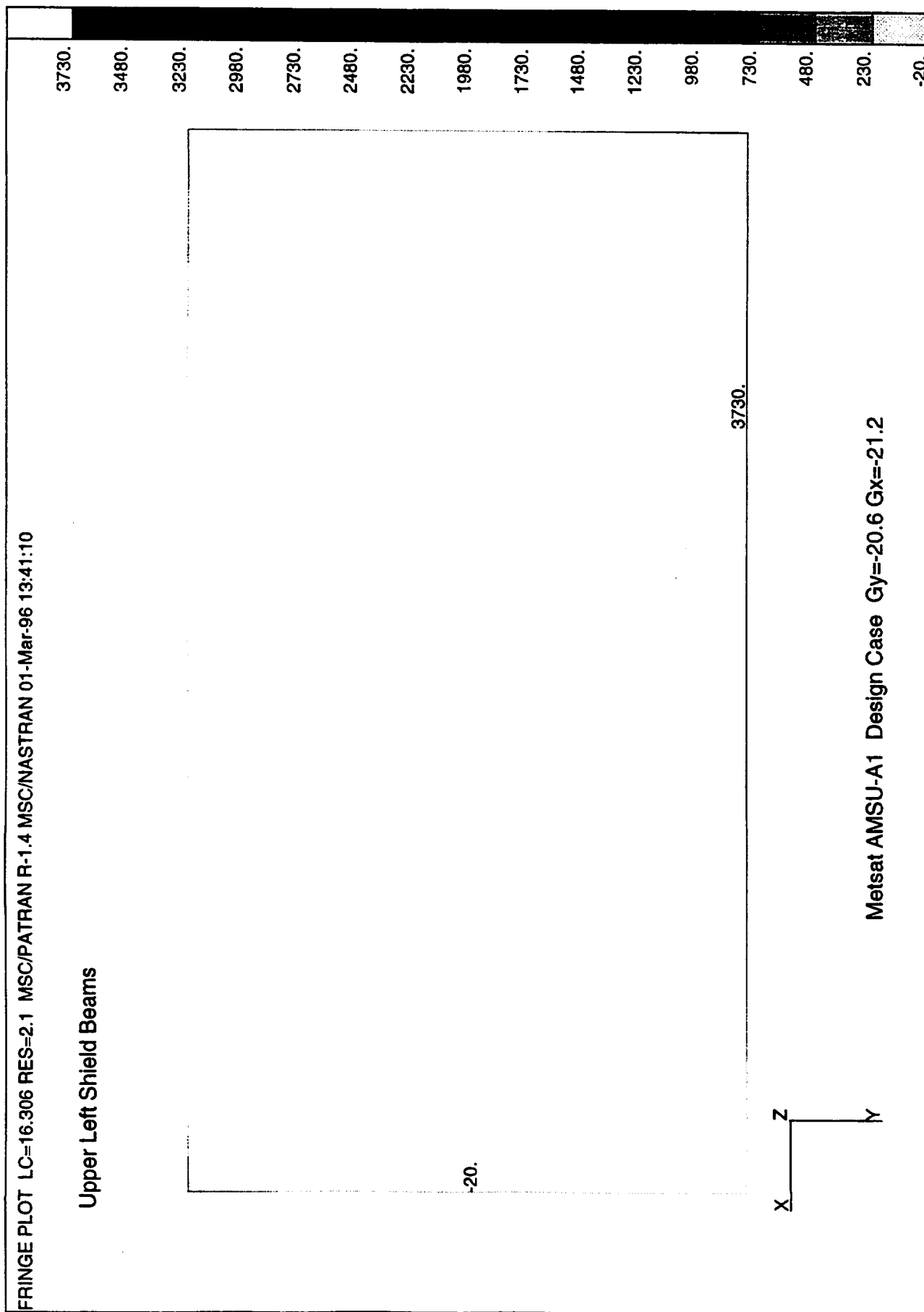
Stress Tensor

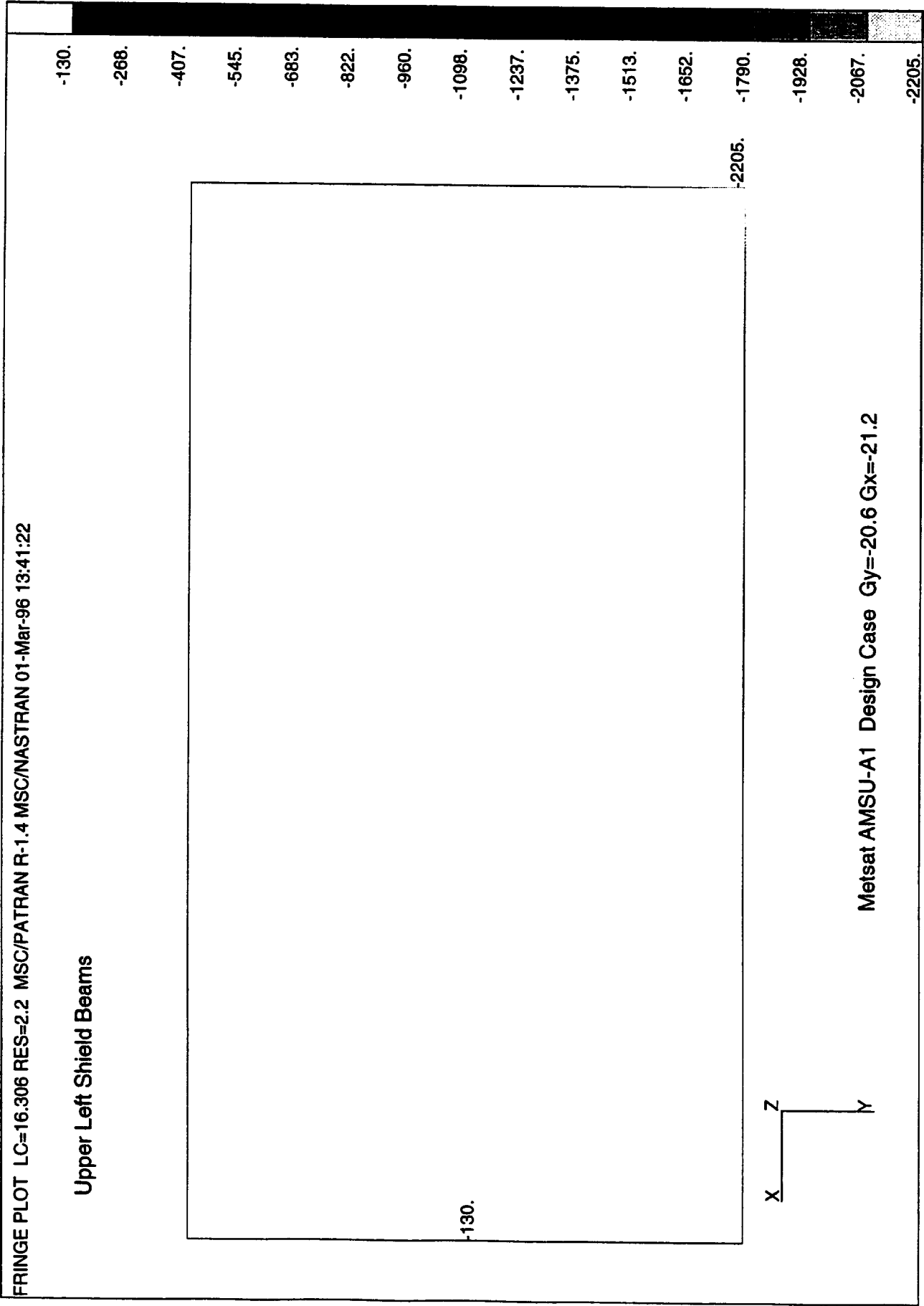
Von Mises

At Z1

Design_Qy=-20.6_Qx=-21.2
Static Subcase





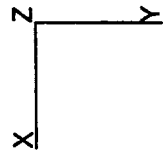


FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:38:41

Upper Right Shield Beams

232.

2122.

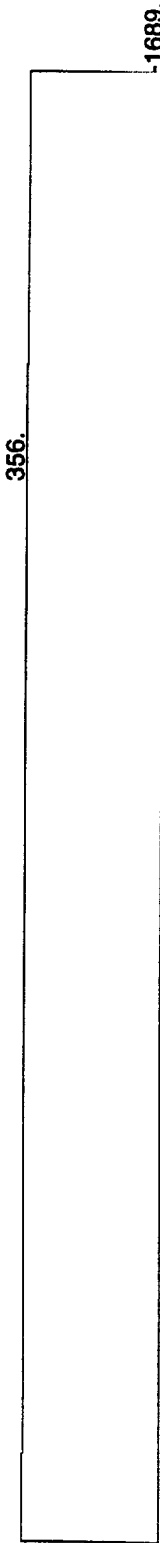


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

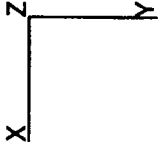
2122.
1996.
1870.
1744.
1618.
1492.
1366.
1240.
1114.
988.
862.
736.
610.
484.
358.
232.

FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:38:50

Upper Right Shield Beams



-1689.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

- 356.
- 220.
- 83.
- 53.
- 189.
- 326.
- 462.
- 598.
- 735.
- 871.
- 1007.
- 1144.
- 1280.
- 1416.
- 1553.
- 1689.

Time: 12:38:46
Date: 02/29/96

Metsat AMSU-A1
Lower Card Cage/Cards

Contour
Node Scalar1

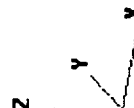
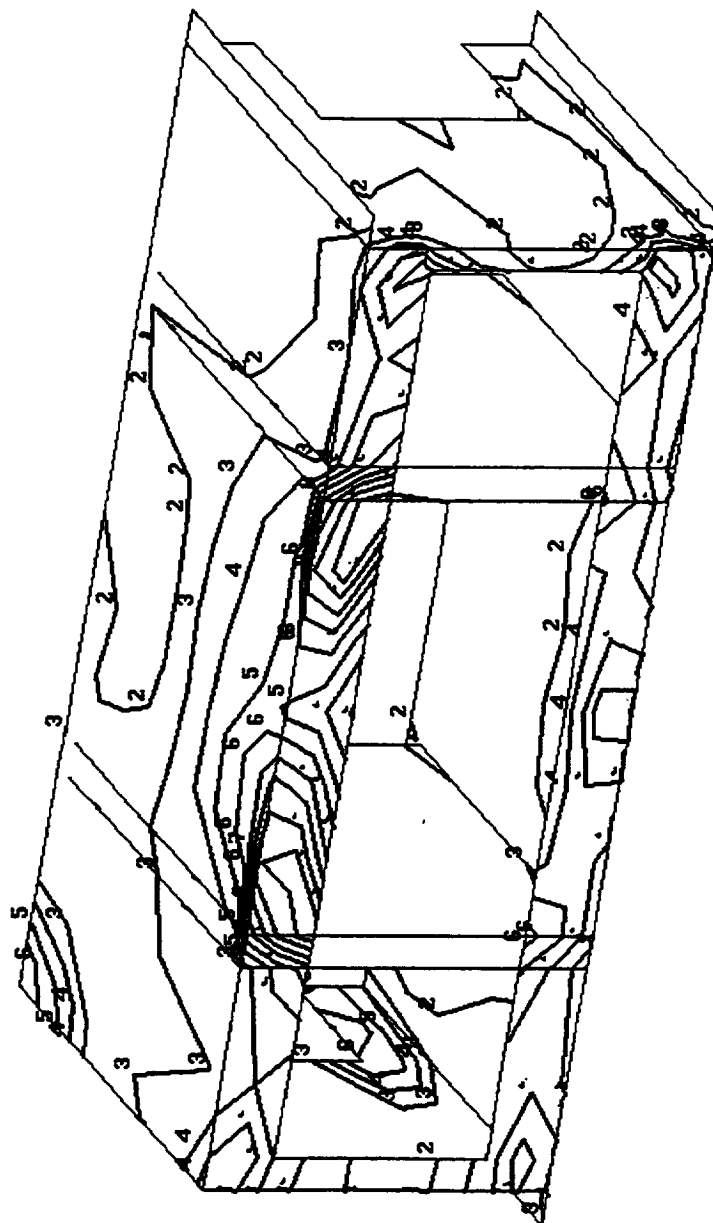
Color Index

—	0	0.240E+04
—	9	0.213E+04
—	8	0.187E+04
—	7	0.160E+04
—	6	0.134E+04
—	5	0.108E+04
—	4	0.813E+03
—	3	0.550E+03
—	2	0.286E+03
—	1	0.223E+02

Min = 2.231268E+01
Max = 2.659102E+03
Min ID= 5532
Max ID= 3733
Contour_3:
Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0x=-21.2
Static Subcase



Metsat AMSU-A1
Lower Card Cage/Cards

Time: 12:40:03
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.243E+04
9	0.216E+04
8	0.190E+04
7	0.163E+04
6	0.137E+04
5	0.110E+04
4	0.834E+03
3	0.569E+03
2	0.303E+03
1	0.377E+02

Min = 3.769654E+01

Max = 2.692394E+03

Min ID= 5532

Max ID= 3726

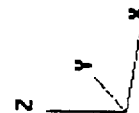
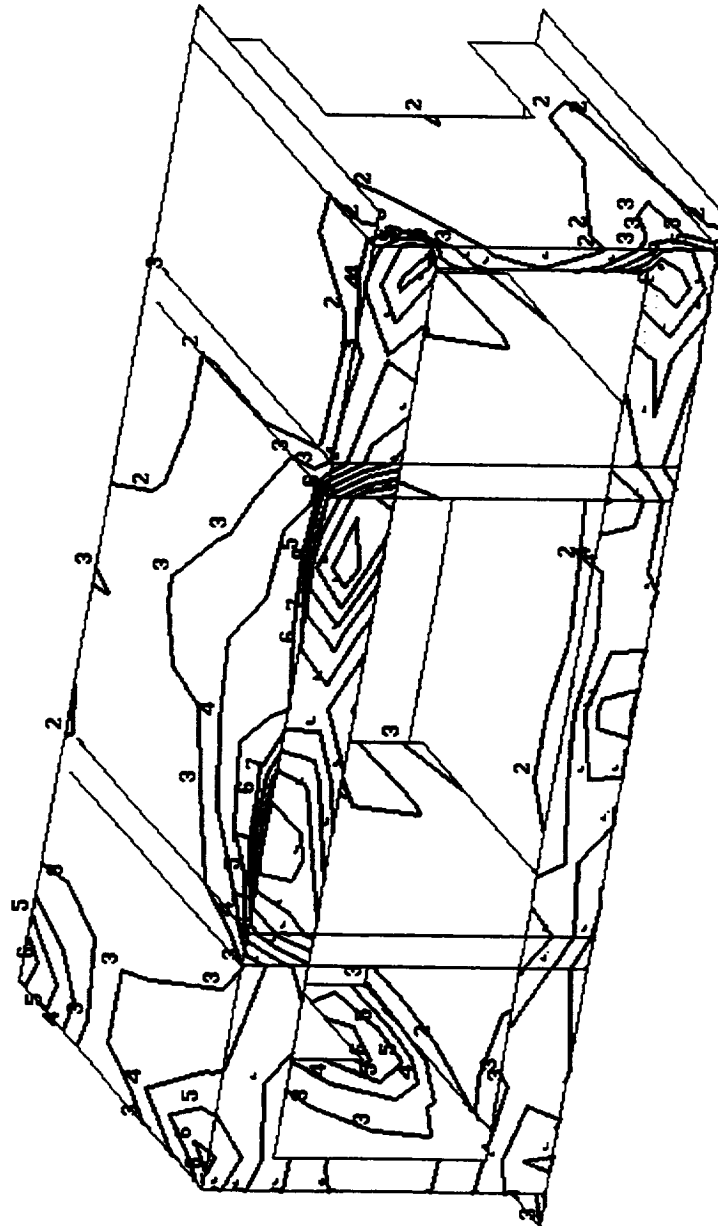
Contour_4:

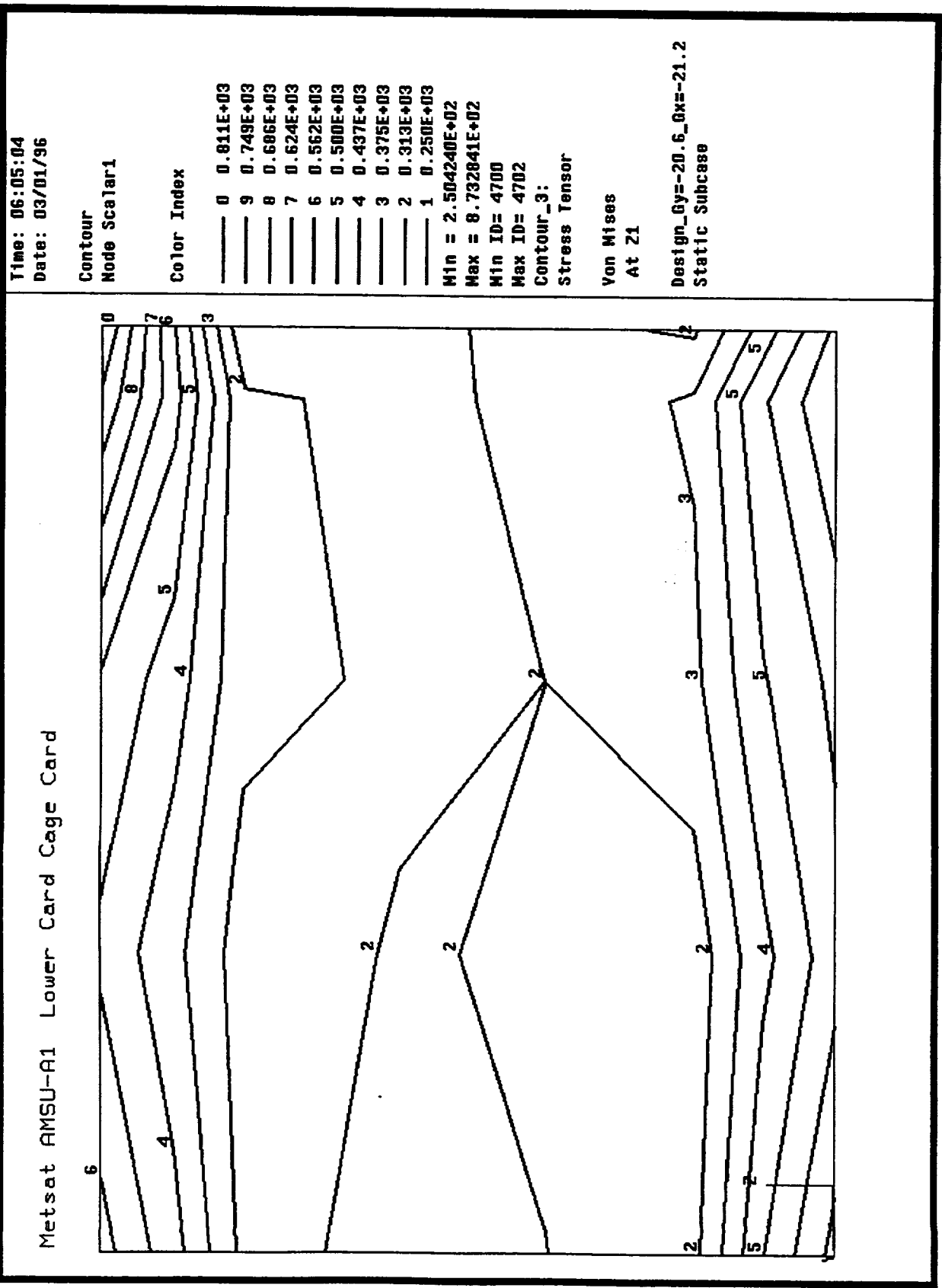
Stress Tensor

Von Mises

At 22

Design_0y=-20.6_0x=-21.2
Static Subcase





Metsat AMSU-A1 Lower Card Cage Card

Time: 06:03:47
Date: 03/01/96

Contour
Node Scalar1

Color Index	
0	0.780E+03
1	0.726E+03
2	0.673E+03
3	0.619E+03
4	0.565E+03
5	0.511E+03
6	0.457E+03
7	0.403E+03
8	0.350E+03
9	0.296E+03

Min = 2.957442E+02
Max = 8.340050E+02

Min ID= 4716

Max ID= 4702

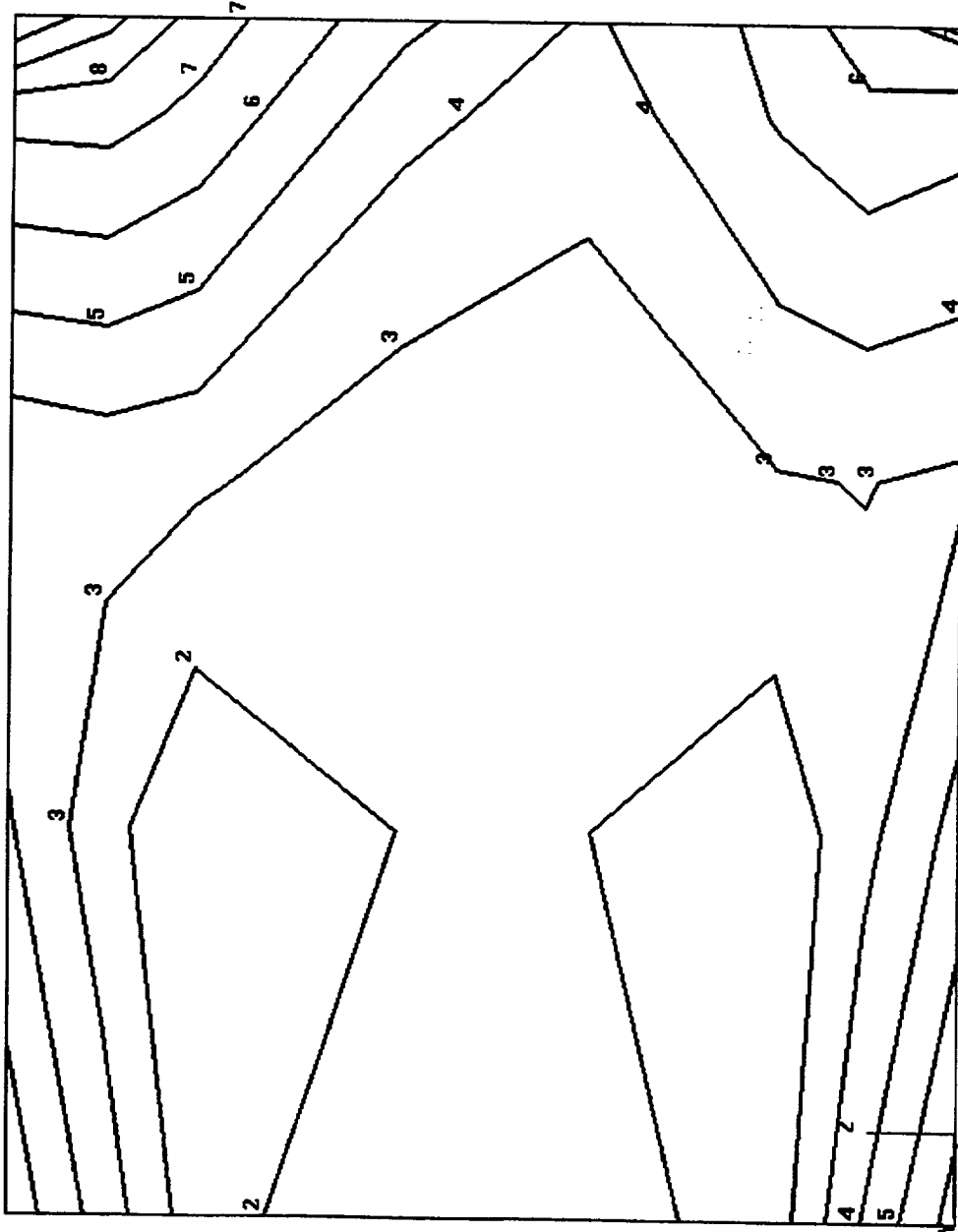
Contour_4:

Stress Tensor

Von Mises

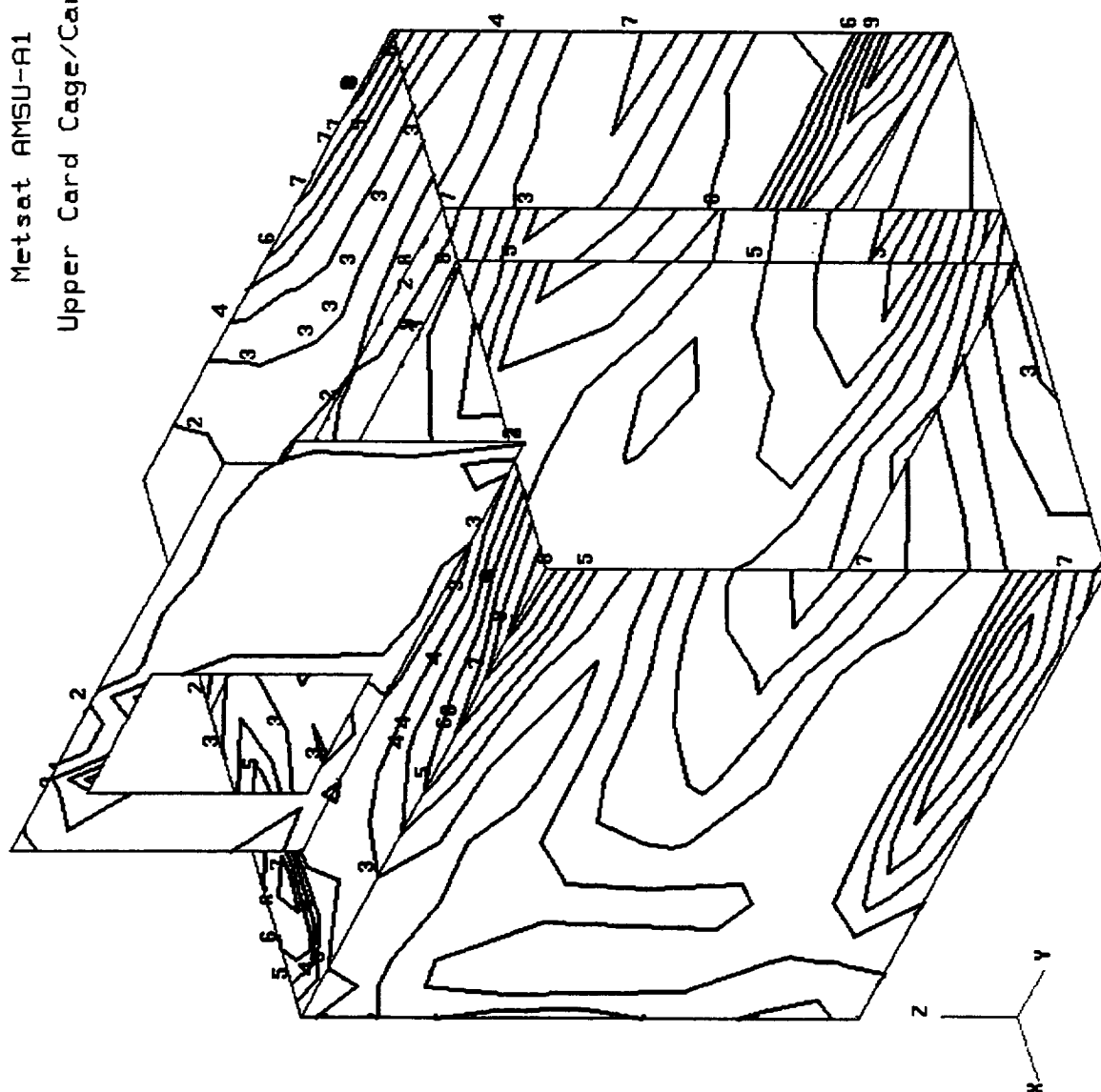
At Z2

Design_Qy=-20.6_Gx=-21.2
Static Subcase



Time: 12:50:44
Date: 02/29/96

Metsat AMSU-A1
Upper Card Cage/Cards



Contour
Node Scalar1

Color Index

—	0	0.478E+03
—	9	0.429E+03
—	8	0.380E+03
—	7	0.331E+03
—	6	0.282E+03
—	5	0.233E+03
—	4	0.184E+03
—	3	0.135E+03
—	2	0.862E+02
—	1	0.372E+02

Min = 3.718311E+01
Max = 5.269467E+02

Min ID= 3415

Max ID= 3583

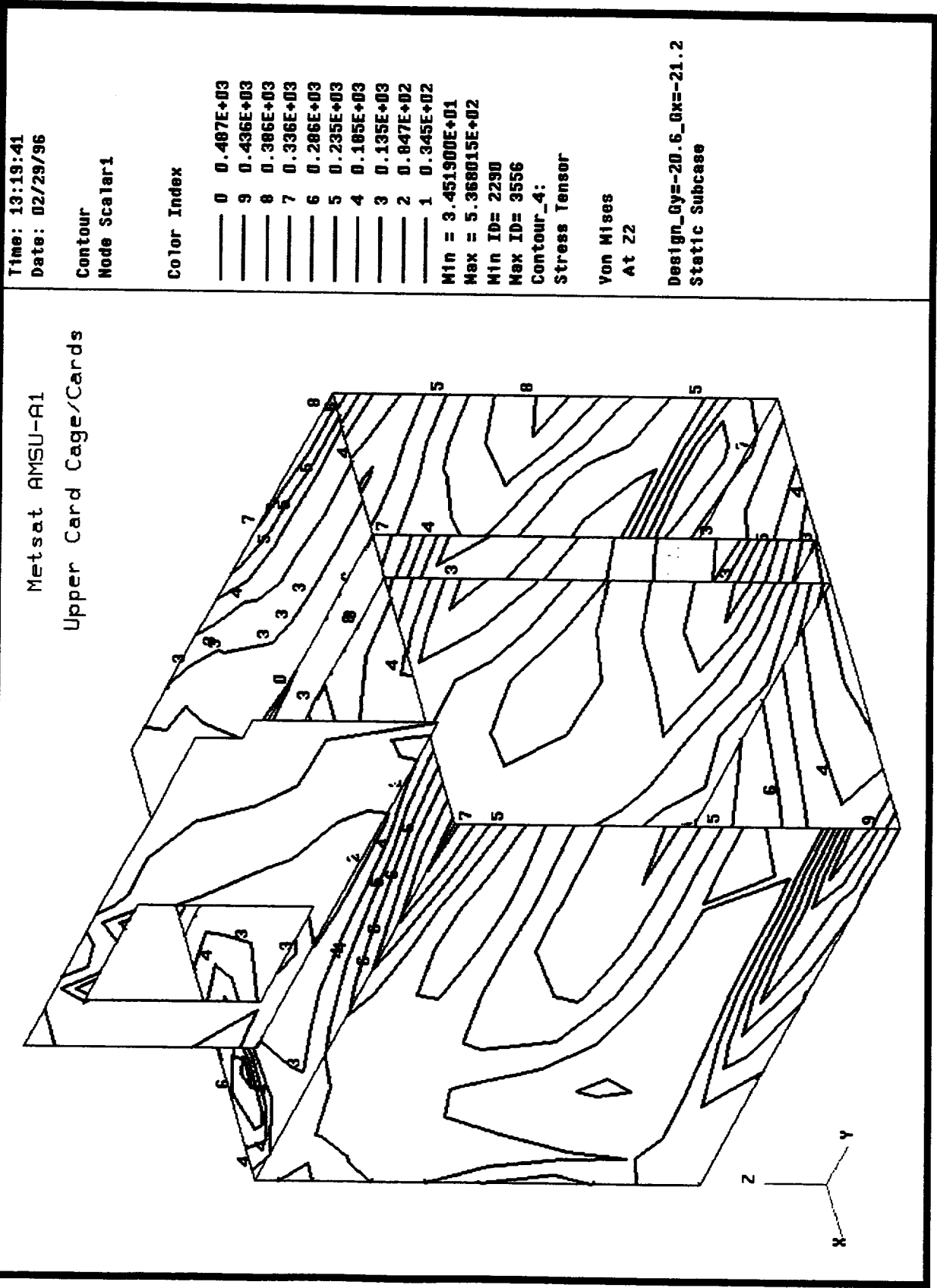
Contour_3:

Stress Tensor

Von Mises

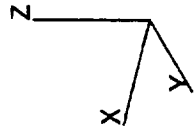
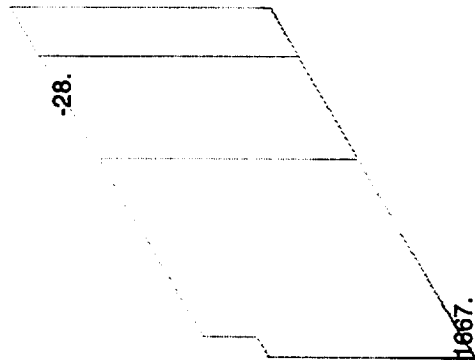
At Z1

Design_Qy=-20.6_0x=-21.2
Static Subcase



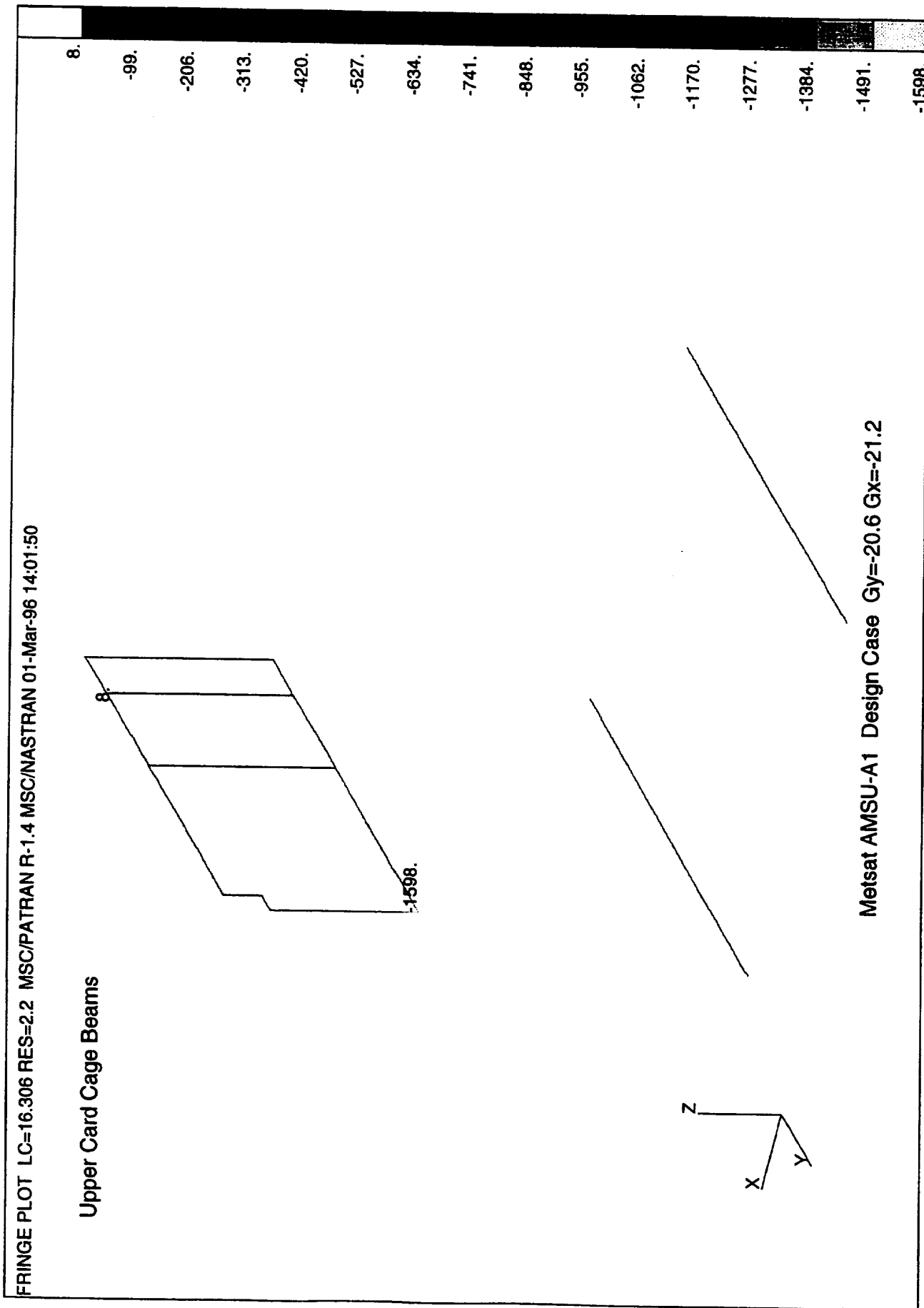
FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:01:45

Upper Card Cage Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

1667.
1554.
1441.
1328.
1215.
1102.
989.
876.
763.
650.
537.
424.
311.
198.
85.
-28.



Time: 10:45:15
Date: 03/05/96

Contour
Node Scalar2

Color Index

0	0.478E+03
9	0.429E+03
8	0.380E+03
7	0.331E+03
6	0.282E+03
5	0.233E+03
4	0.184E+03
3	0.135E+03
2	0.862E+02
1	0.372E+02

Min = 3.718311E+01
Max = 5.269467E+02

Min ID= 3415

Max ID= 3583

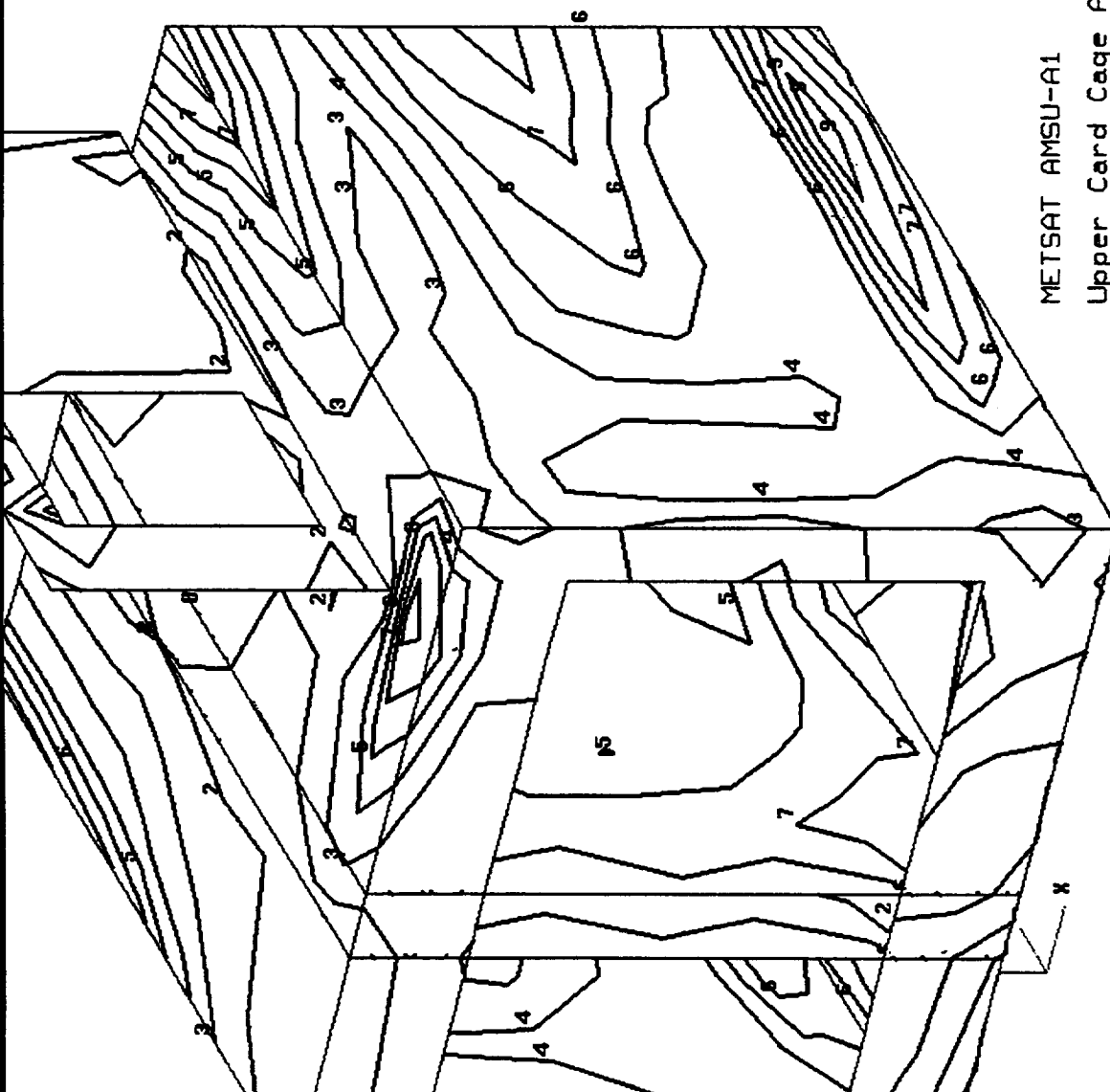
Contour_1:

Stress Tensor

Von Mises

At 21

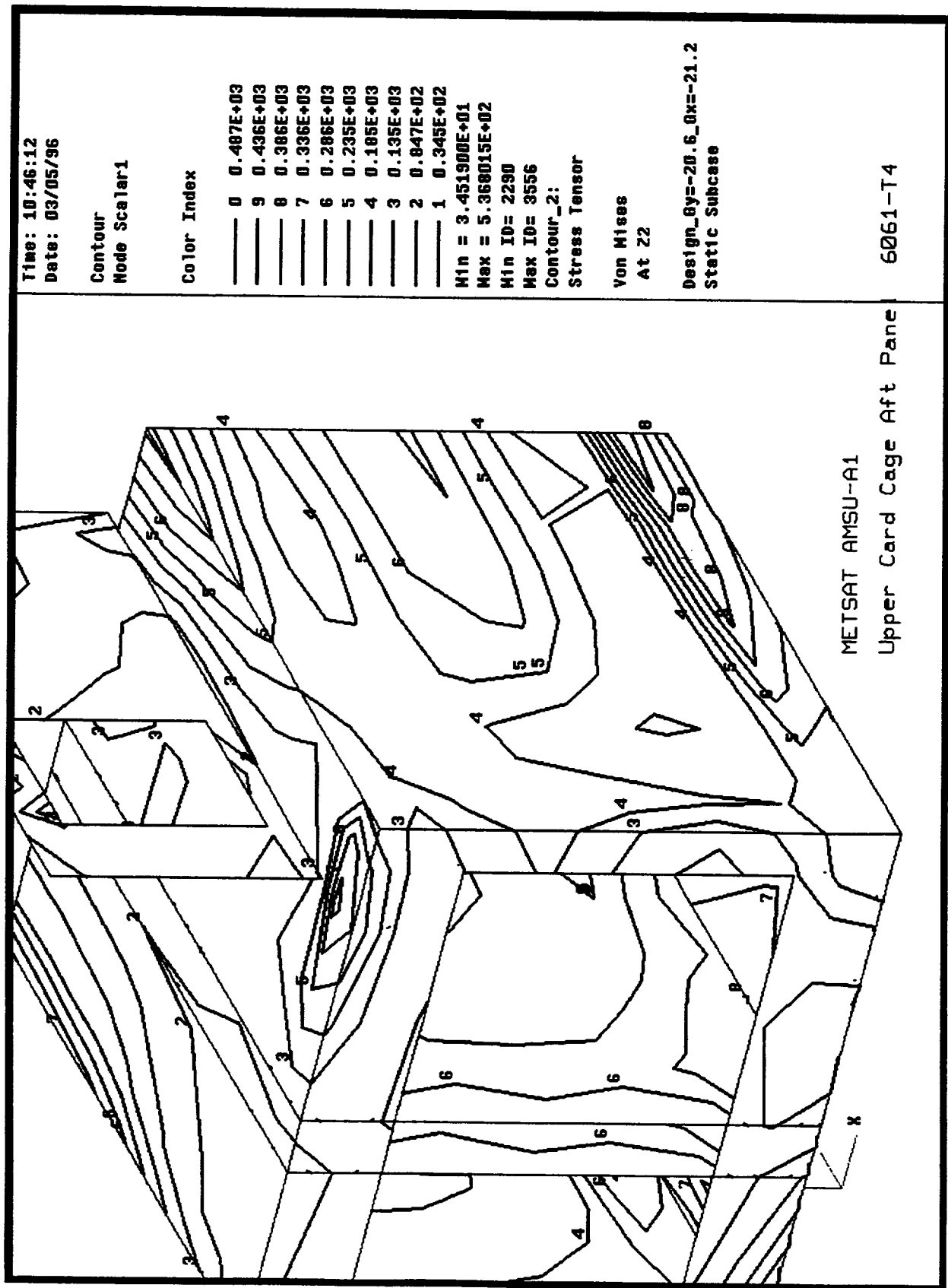
Design_Qy=-20.6_Qx=-21.2
Static Subcase



METSAT AMSU-A1

Upper Card Cage Aft Pane

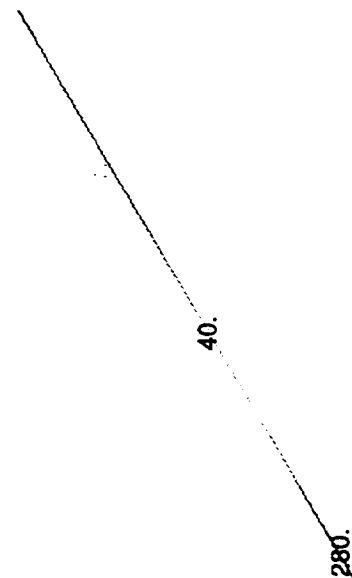
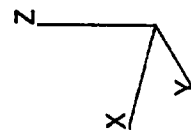
6061-T4



FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:12:49

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL

BEAM ELEMENTS

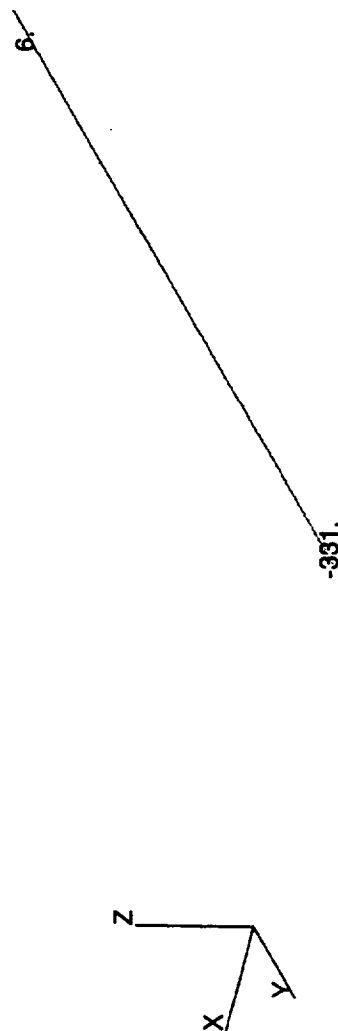


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

280.
264.
248.
232.
216.
200.
184.
168.
152.
136.
120.
104.
88.
72.
56.
40.

FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:12:55

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL
BEAM ELEMENTS



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

- 6.
- 16.
- 39.
- 61.
- 84.
- 106.
- 128.
- 151.
- 173.
- 196.
- 218.
- 241.
- 263.
- 286.
- 308.
- 331.

Time: 15:44:23
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.484E+03
1	0.443E+03
2	0.402E+03
3	0.361E+03
4	0.320E+03
5	0.279E+03
6	0.237E+03
7	0.196E+03
8	0.155E+03
9	0.114E+03

Min = 1.142483E+02

Max = 5.248956E+02

Min ID= 11852

Max ID= 11838

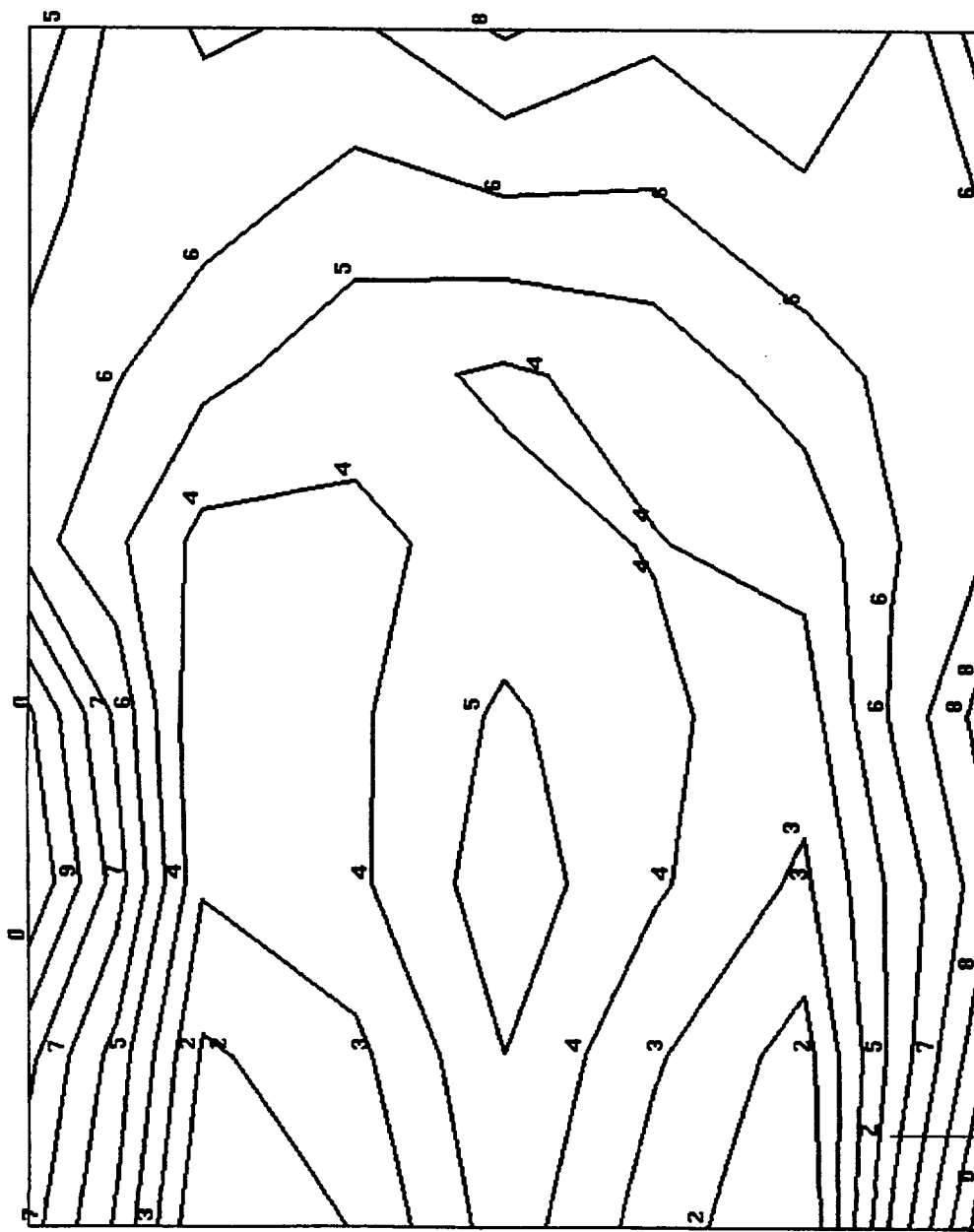
Contour_3:

Stress Tensor

Von Mises
At 21

Design_Qy=-20.6_Qx=-21.2
Static Subcase

Metsat AMSU-A1 Upper Card



Metsat AMSU-A1 Upper Card

Time: 15:48:43
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.488E+03
—	9	0.446E+03
—	8	0.405E+03
—	7	0.363E+03
—	6	0.322E+03
—	5	0.281E+03
—	4	0.239E+03
—	3	0.198E+03
—	2	0.157E+03
—	1	0.115E+03

Min = 1.151222E+02

Max = 5.290116E+02

Min ID= 11292

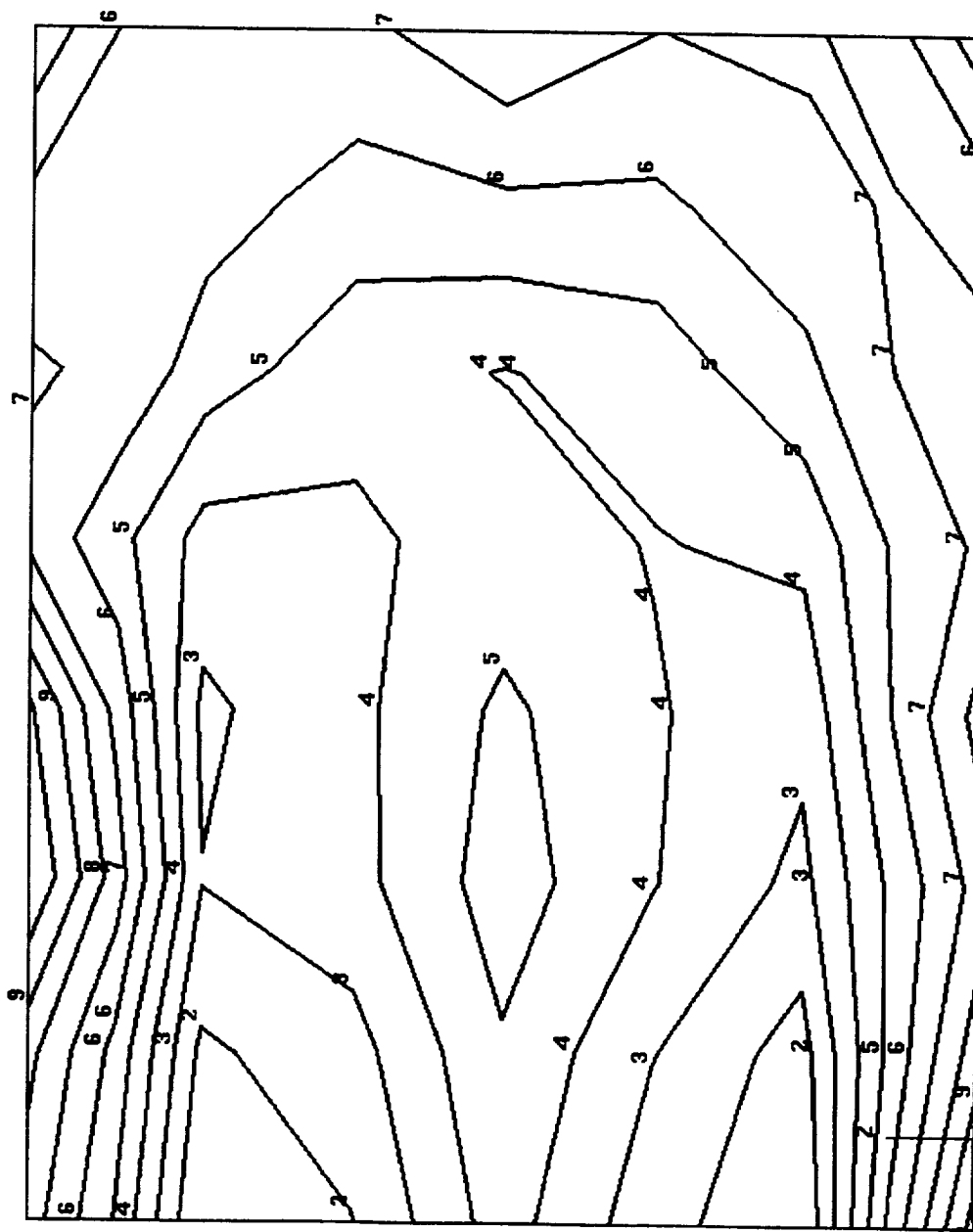
Max ID= 11334

Contour_4:

Stress Tensor

Von Mises
At 22

Design_Oy=-20.6_Ox=-21.2
Static Subcase



Metsat AMSU-A1

Lower Warmload w/Supports

Time: 09:42:01
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.750E+03
—	9	0.679E+03
—	8	0.600E+03
—	7	0.521E+03
—	6	0.443E+03
—	5	0.364E+03
—	4	0.285E+03
—	3	0.206E+03
—	2	0.127E+03
—	1	0.483E+02

M1n = 4.834832E+01

Max = 8.368942E+02

M1n ID= 4956

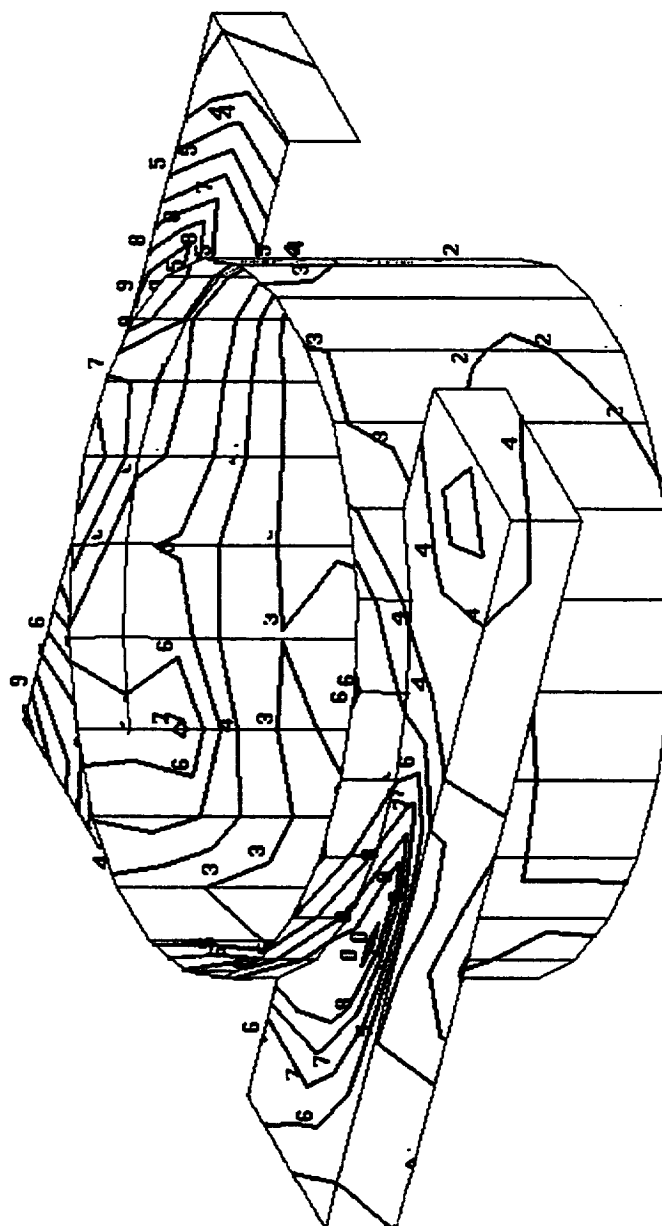
Max ID= 3055

Contour_3:

Stress Tensor

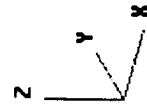
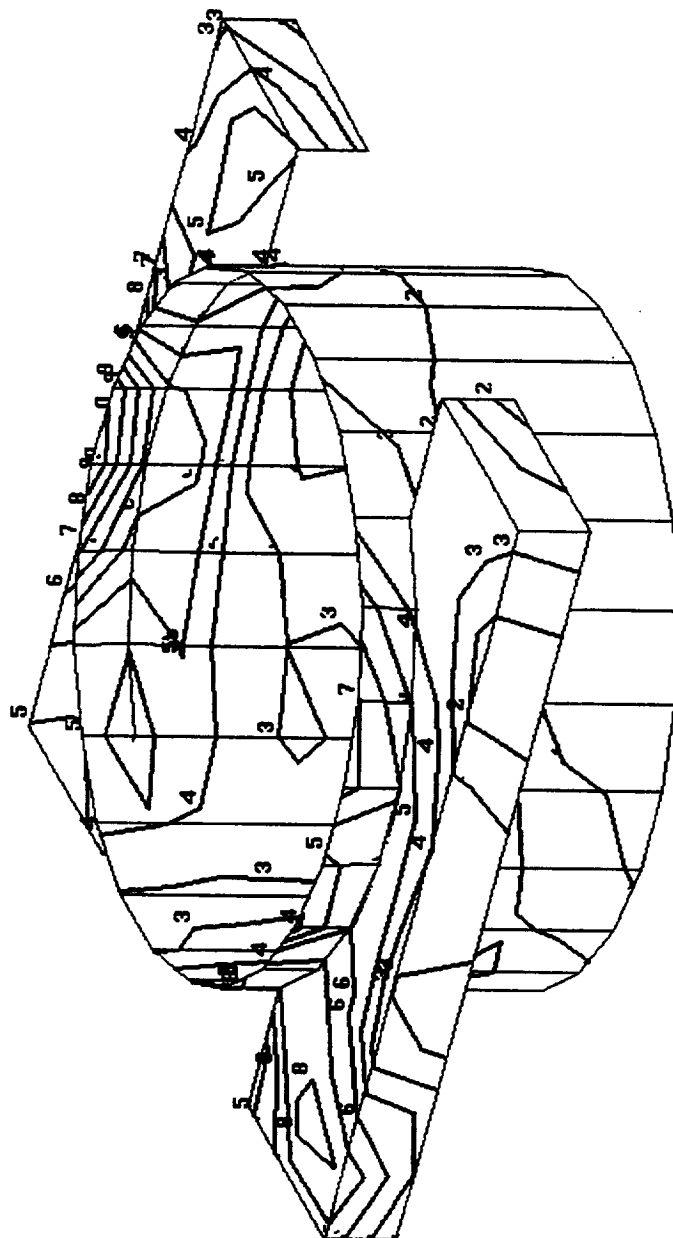
Von Mises
At Z1

Design_0y=-20.6_0x=-21.2
Static Subcase



Metsat AMSU-A1

Lower Warmload w/Supports



Time: 09:47:13
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.923E+03
9	0.828E+03
8	0.733E+03
7	0.638E+03
6	0.542E+03
5	0.447E+03
4	0.352E+03
3	0.257E+03
2	0.162E+03
1	0.664E+02

Min = 6.643217E+01

Max = 1.018442E+03

Min ID= 5487

Max ID= 4881

Contour_4:

Stress Tensor

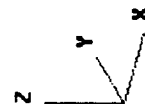
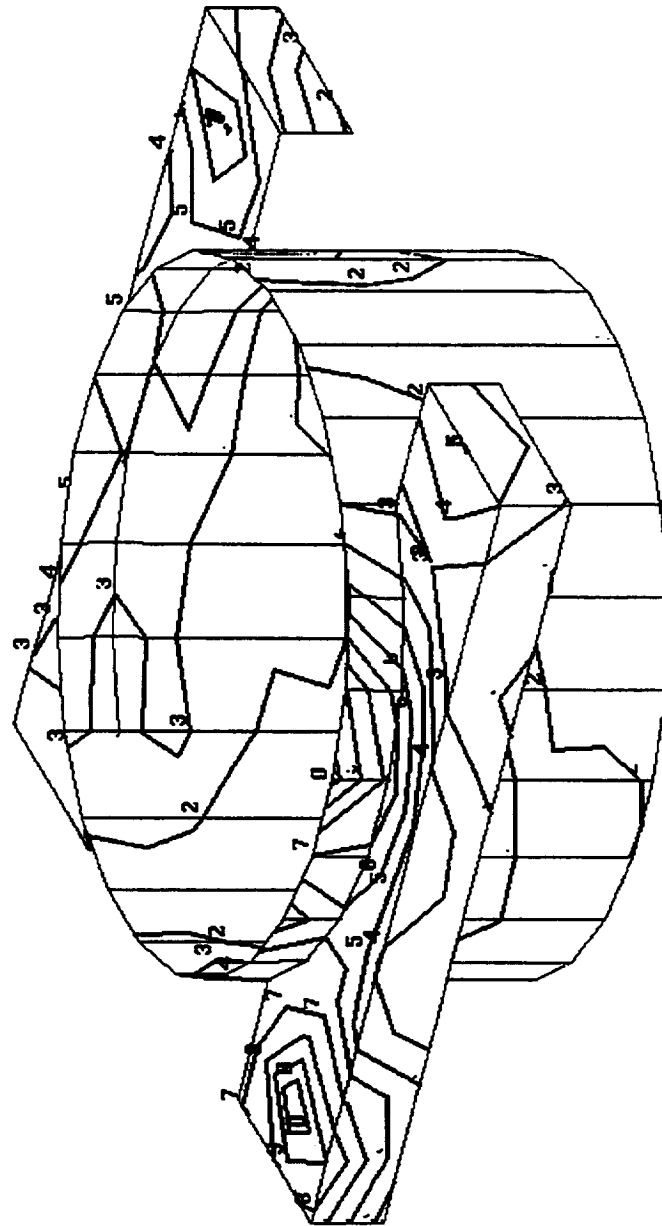
Von Mises

At 22

Design_By=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1

Upper Warmload w/Supports



Time: 09:48:29
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.782E+03
1	0.696E+03
2	0.609E+03
3	0.523E+03
4	0.437E+03
5	0.350E+03
6	0.264E+03
7	0.177E+03
8	0.909E+02
9	0.444E+01

Min = 4.443931E+00
Max = 8.607560E+02

Min ID= 5427

Max ID= 2991

Contour_4:

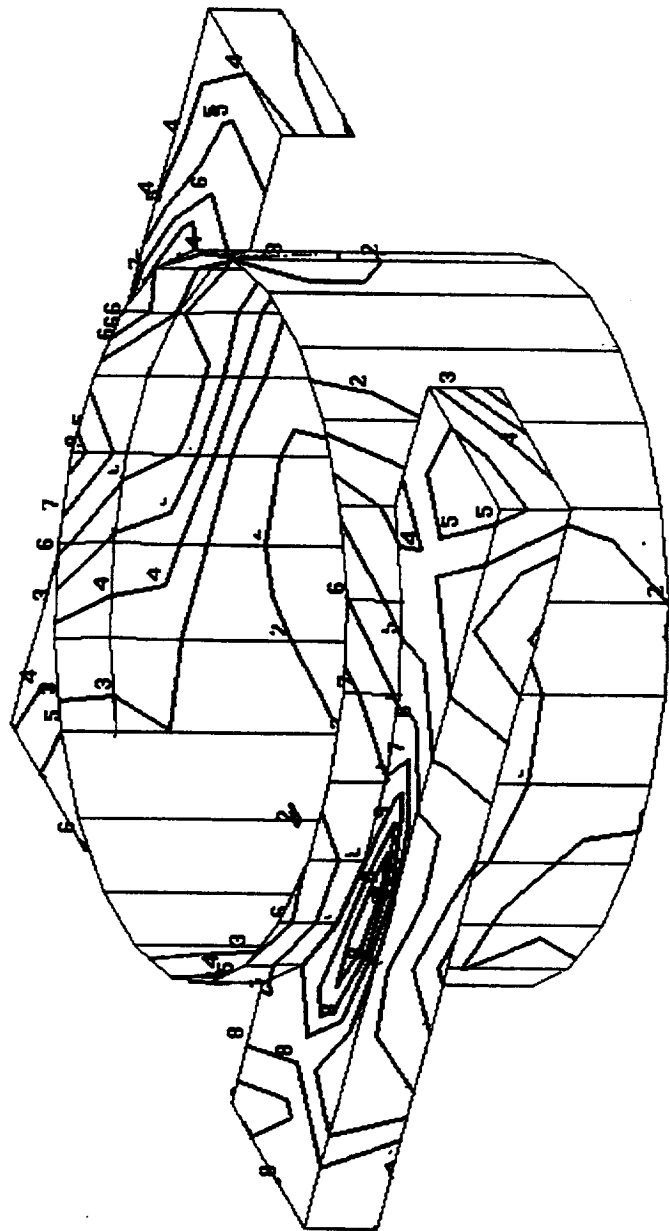
Stress Tensor

Von Mises
At 22

Design_Qy=-20.6_0x=-21.2
Static Subcase

Metsat AMSU-A1

Upper Warmload w/Supports



Time: 09:50:22
Date: 02/29/96

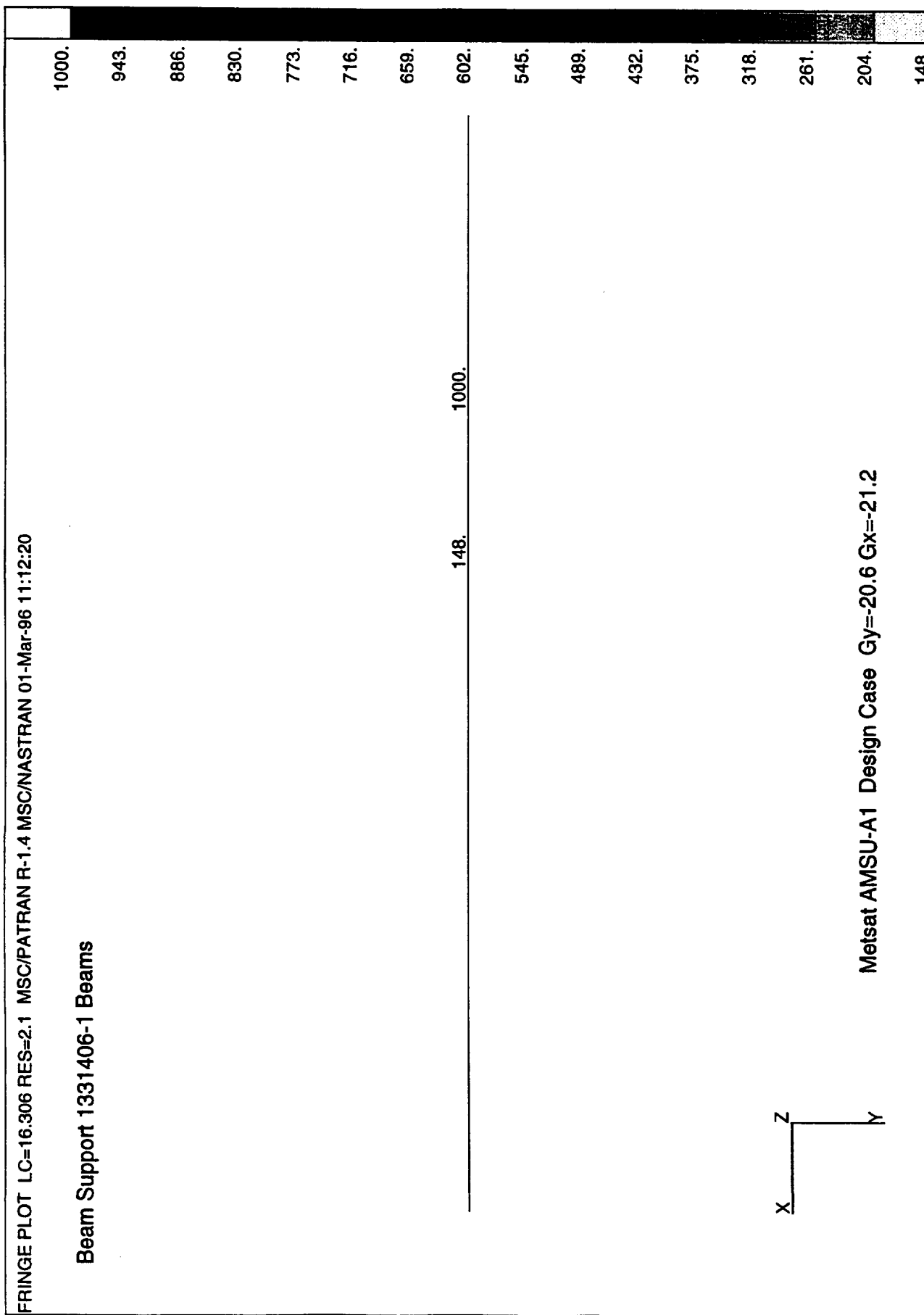
Contour
Node Scalar1

Color Index	
0	0.675E+03
9	0.600E+03
8	0.526E+03
7	0.451E+03
6	0.377E+03
5	0.303E+03
4	0.228E+03
3	0.154E+03
2	0.791E+02
1	0.466E+01

Min = 4.663424E+00
Max = 7.492985E+02
Min ID= 5423
Max ID= 2995
Contour_3:
Stress Tensor

Von Mises
At 21

Design_0y=-20.6_0x=-21.2
Static Subcase

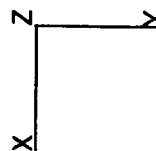


FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:12:29

Beam Support 1331406-1 Beams

-3.
-69.
-134.
-199.
-265.
-330.
-396.
-461.
-526.
-592.
-657.
-723.
-788.
-853.
-919.
-984.

-984.
-3.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

Time: 11:40:29
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.701E+03
9	0.624E+03
8	0.548E+03
7	0.471E+03
6	0.395E+03
5	0.319E+03
4	0.242E+03
3	0.166E+03
2	0.095E+02
1	0.131E+02

Min = 1.314999E+01

Max = 7.769357E+02

Min ID= 4015

Max ID= 4160

Contour_3:

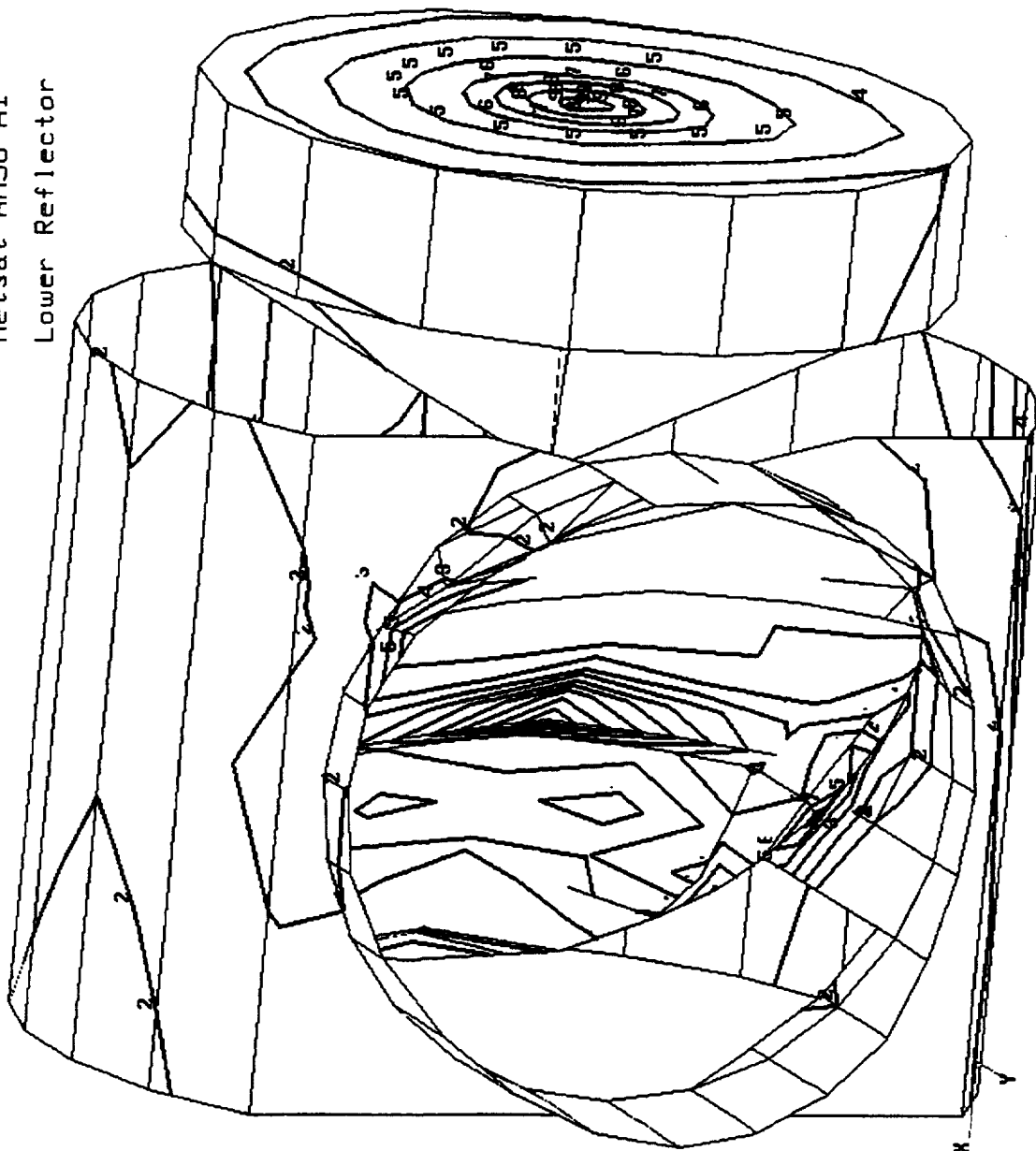
Stress Tensor

Von Mises

At Z1

Design_Oy=-20.6_Ox=-21.2
Static Subcase

Metsat AMSU-A1
Lower Reflector



Metsat AMSU-A1
Lower Reflector

Time: 11:39:46
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.637E+03
9	0.568E+03
8	0.499E+03
7	0.429E+03
6	0.360E+03
5	0.291E+03
4	0.222E+03
3	0.152E+03
2	0.830E+02
1	0.137E+02

Min = 1.370108E+01
Max = 7.065805E+02

Min ID= 4015

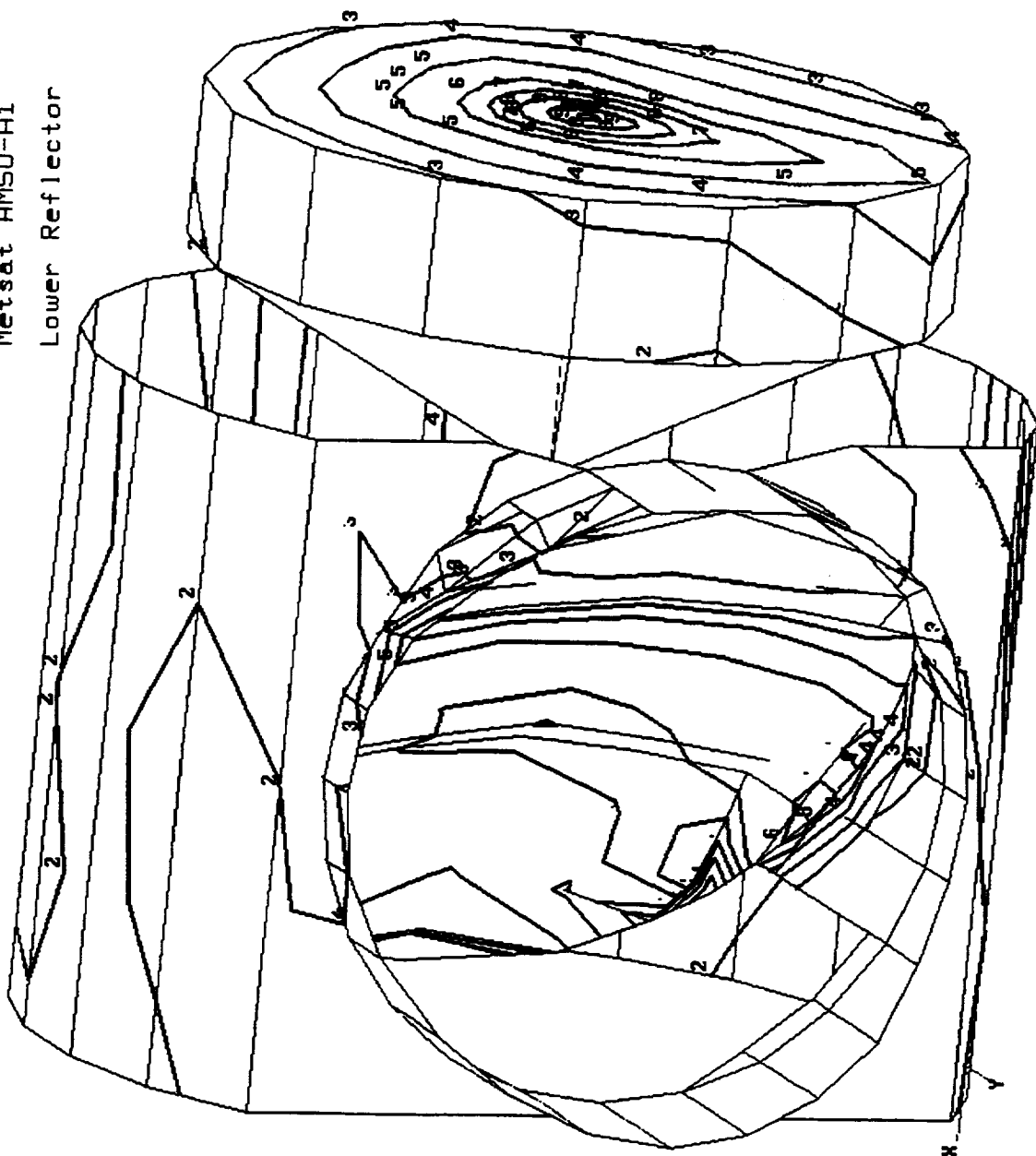
Max ID= 4670

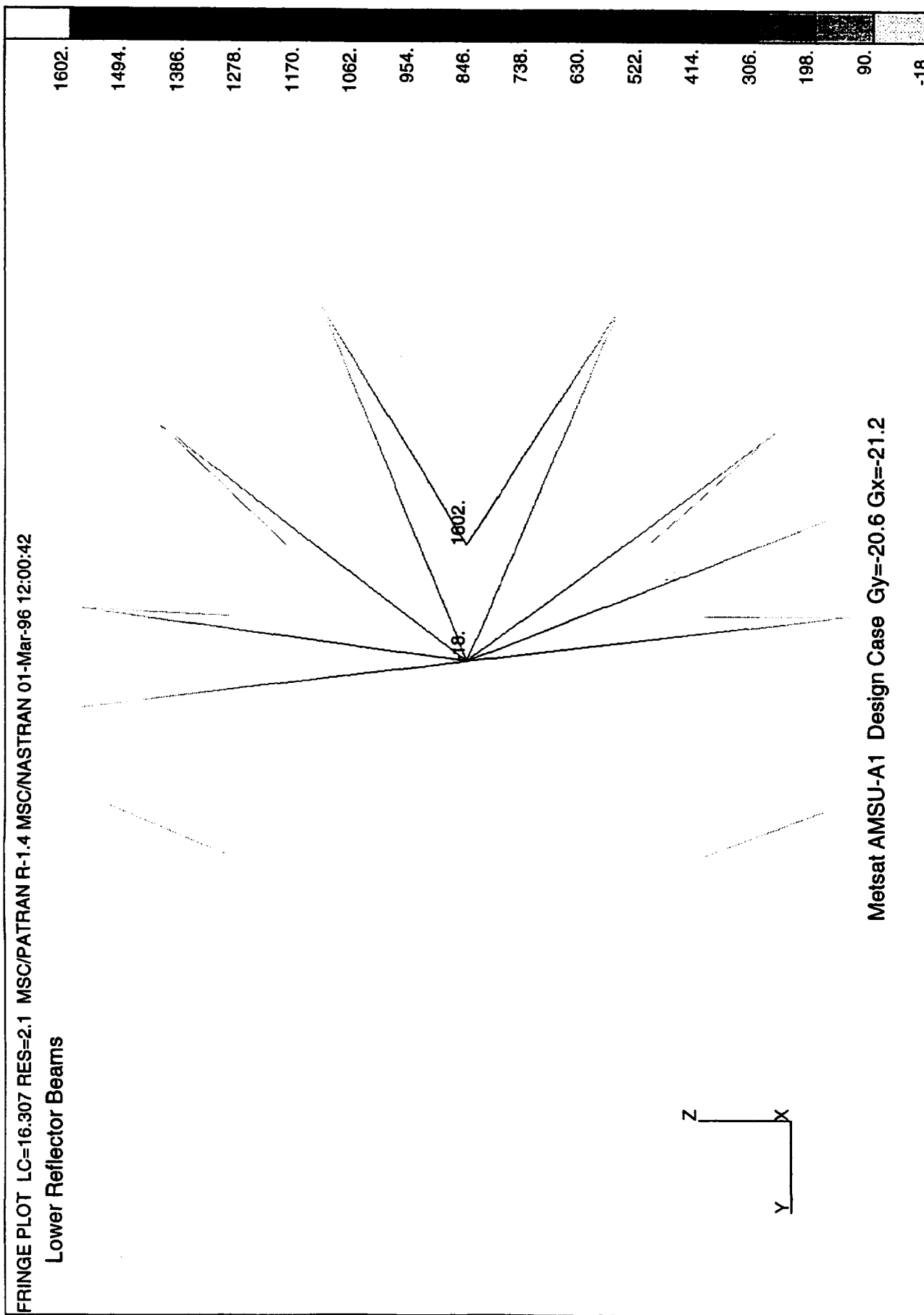
Contour_4:

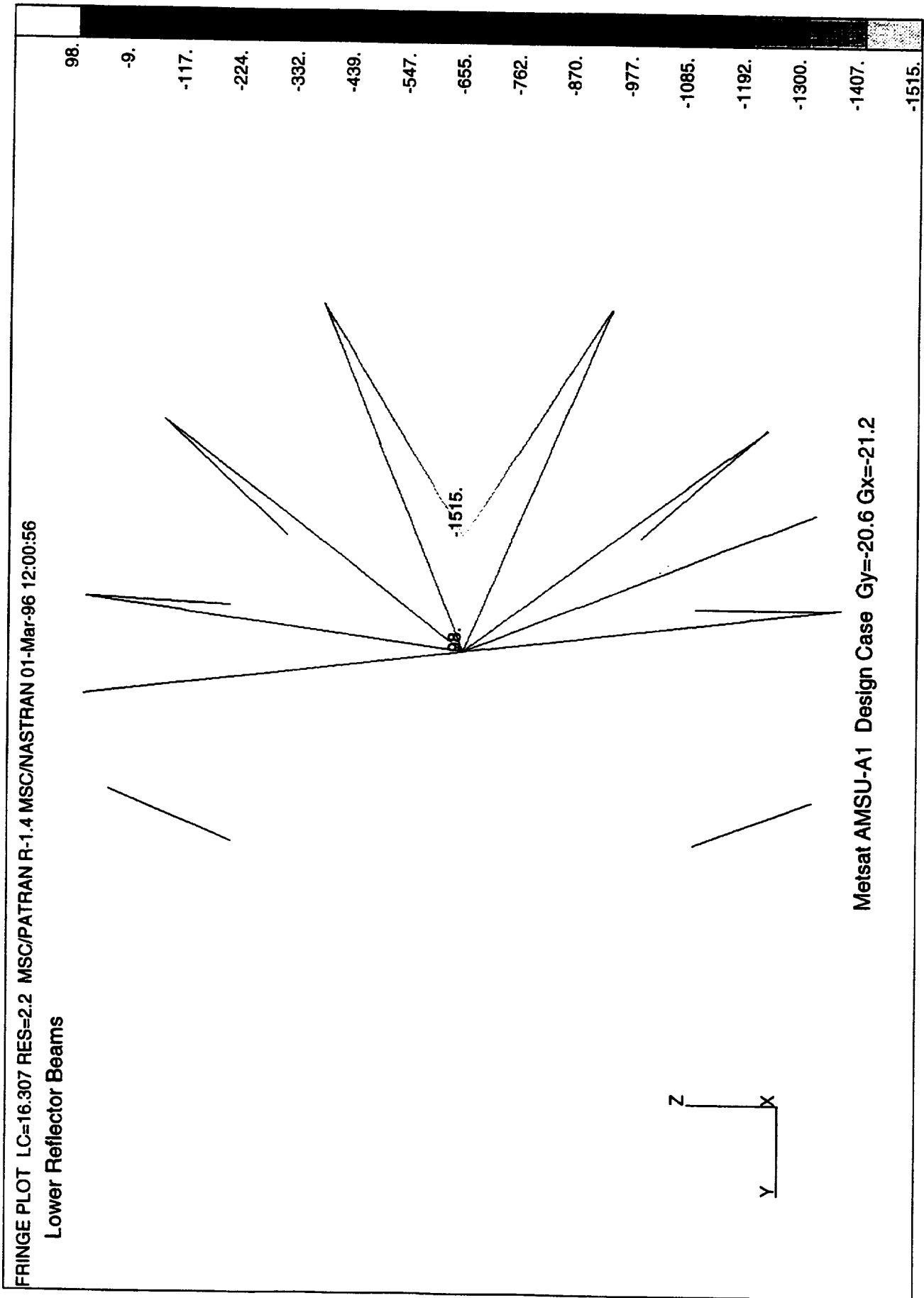
Stress Tensor

Von Mises
At 22

Design_Oy=-20.6_Ox=-21.2
Static Subcase

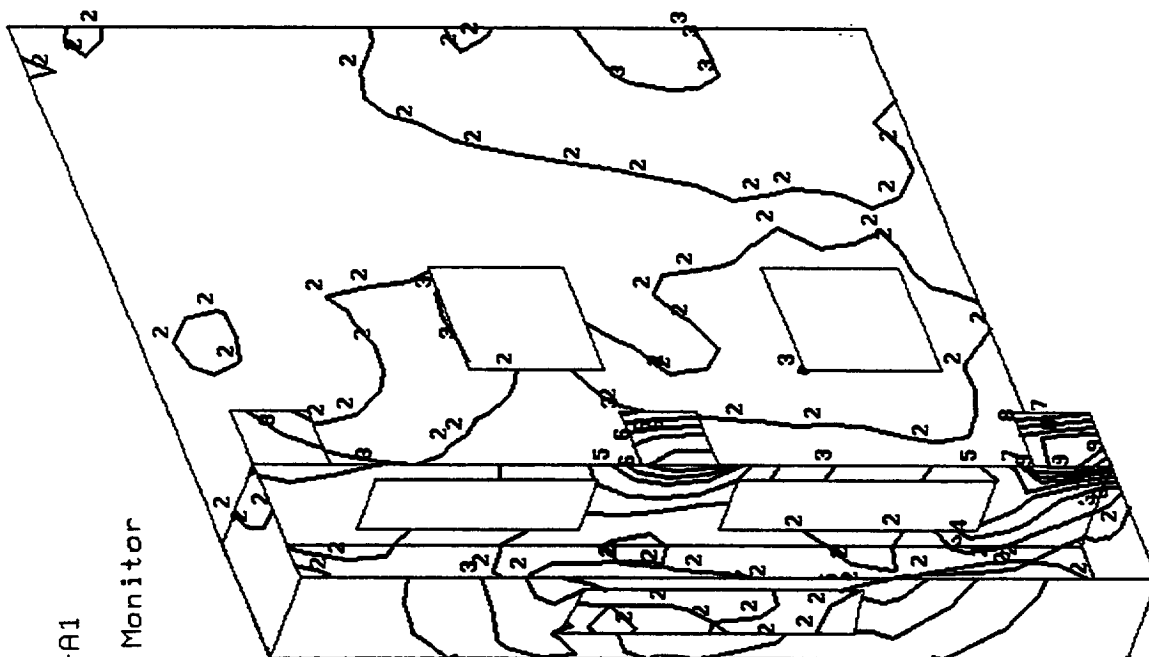






Time: 13:26:09
Date: 02/29/96

Metsat AMSU-A1
Power/Control Monitor



Contour
Node Scalar1

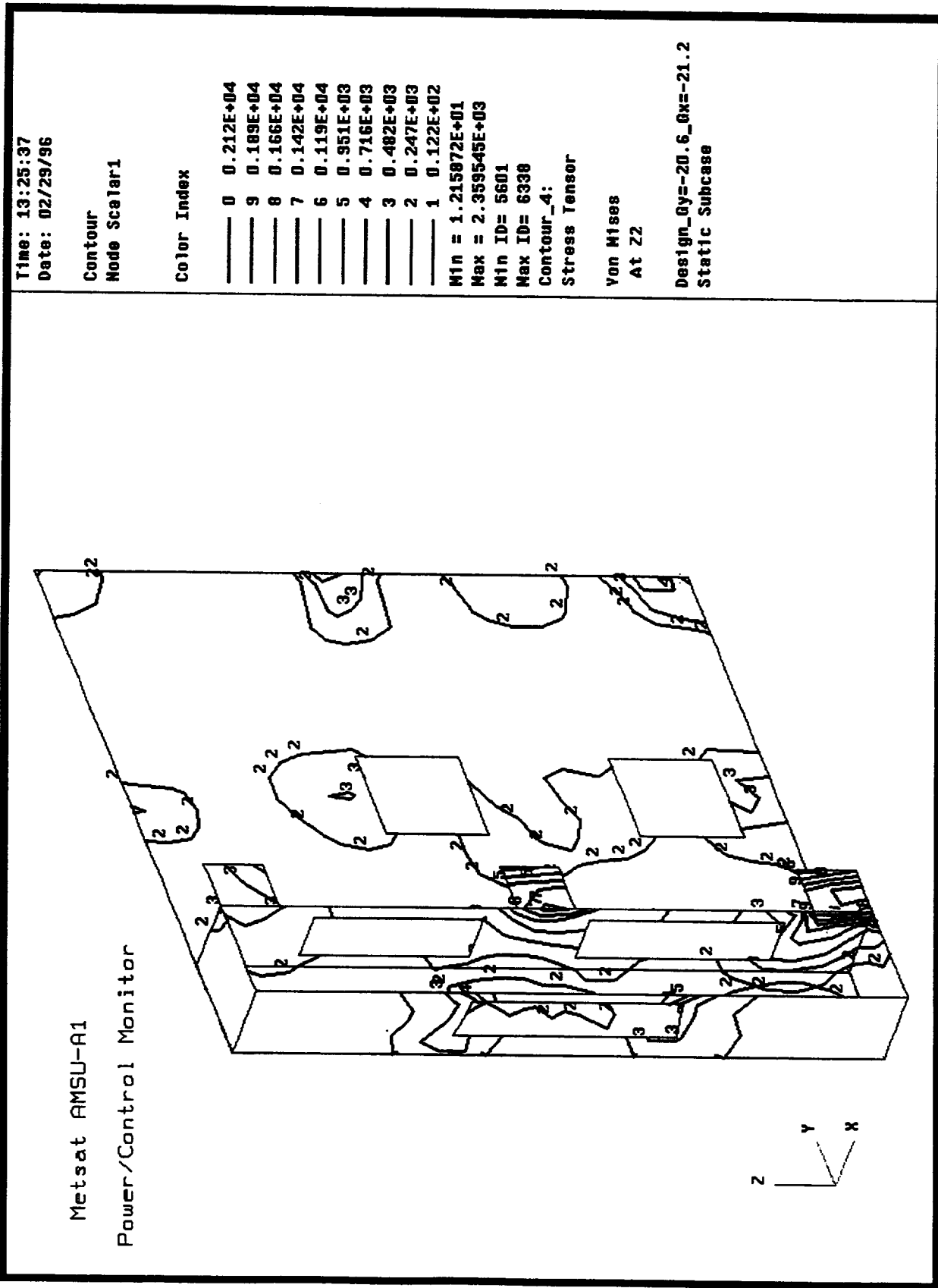
Color Index

0	0.201E+04
9	0.179E+04
8	0.157E+04
7	0.134E+04
6	0.112E+04
5	0.098E+03
4	0.675E+03
3	0.452E+03
2	0.230E+03
1	0.668E+01

Min = 6.677881E+00
Max = 2.235296E+03
Min ID= 5602
Max ID= 6338
Contour_3:
Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0x=-21.2
Static Subcase



Time: 11:23:05
Date: 03/05/96

Contour
Node Scalar1

Color Index

0	0.515E+03
9	0.458E+03
8	0.402E+03
7	0.345E+03
6	0.289E+03
5	0.233E+03
4	0.176E+03
3	0.120E+03
2	0.631E+02
1	0.668E+01

Min = 6.677881E+00

Max = 5.712819E+02

Min ID= 5602

Max ID= 6292

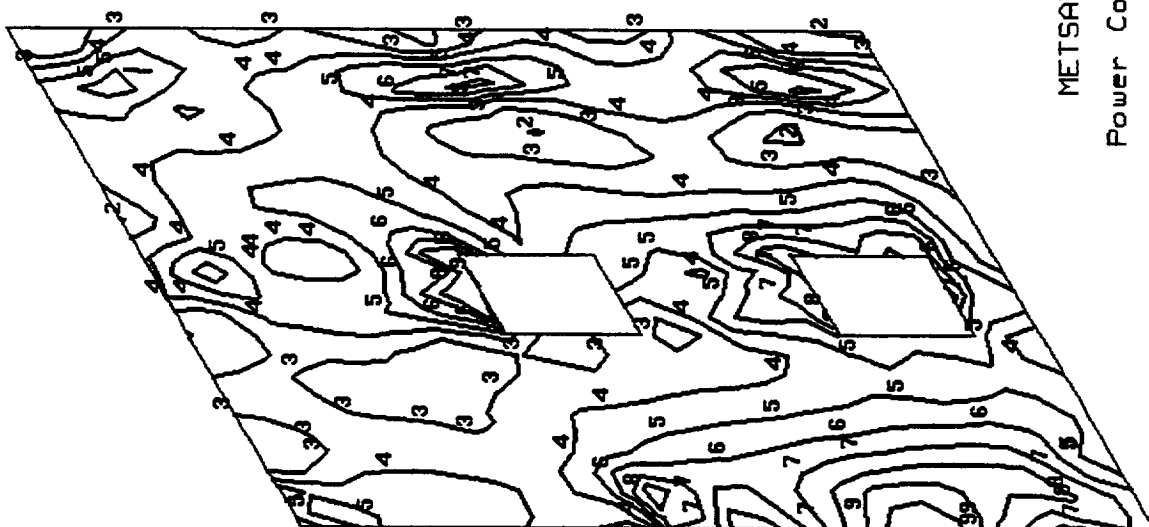
Contour_1:

Stress Tensor

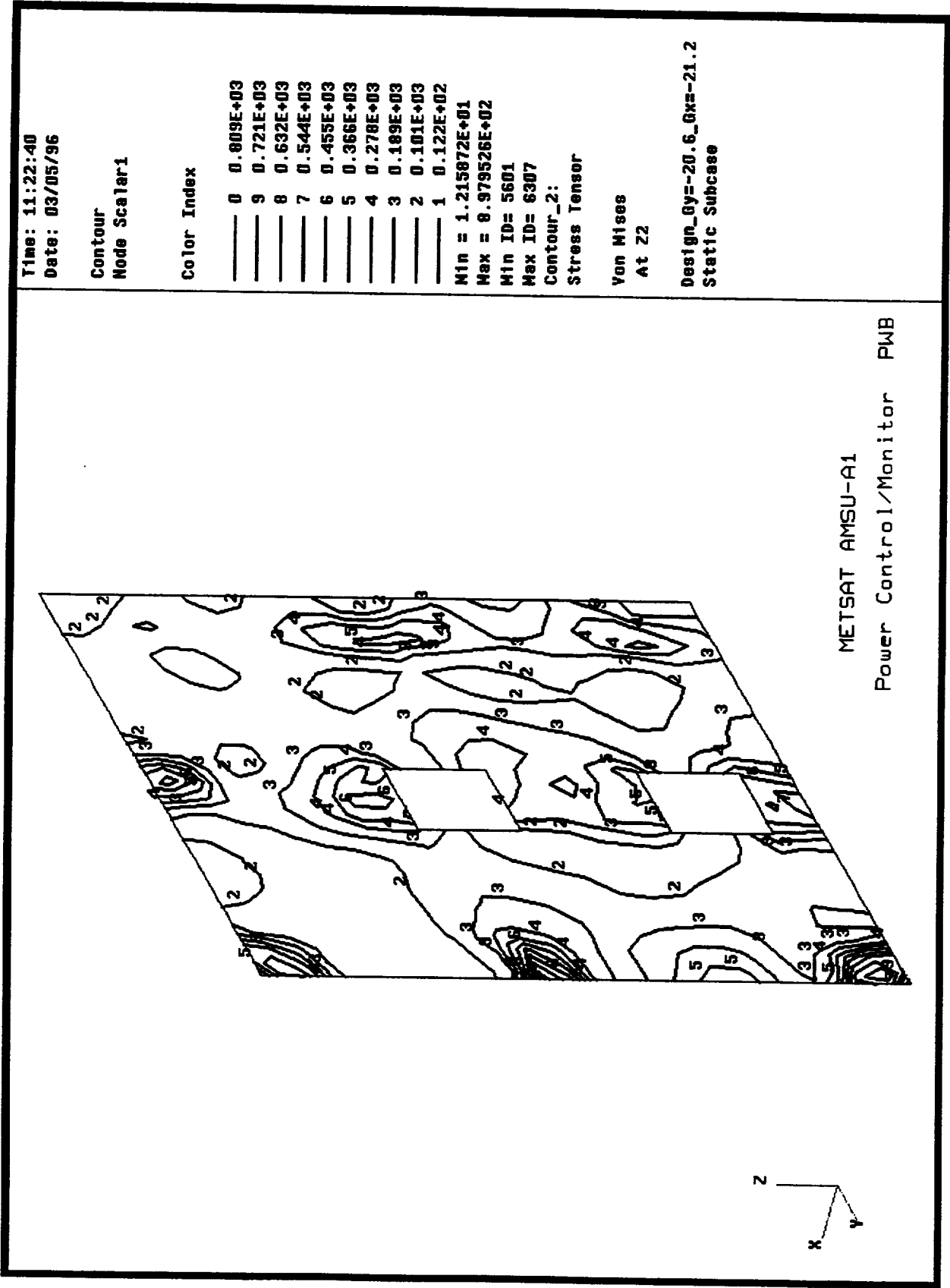
Von Mises

At 21

Design_0y=-20.6_0x=-21.2
Static Subcase

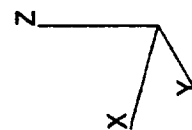


METSAT AMSU-A1
Power Control/Monitor PWB



FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:09:25

Power Control/Module Standoff Beams



10669.

206.

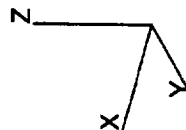
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

10669.
9972.
9274.
8576.
7879.
7181.
6484.
5786.
5089.
4391.
3693.
2996.
2298.
1601.
903.
206.

FRINGE PLOT LC=16.306 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:09:31

Power Control/Module Standoff Beams

-106.
-807.
-1507.
-2207.
-2907.
-3607.
-4308.
-5008.
-5708.
-6408.
-7109.
-7809.
-8509.
-9209.
-9909.
-10610.



-106.

-10610.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

Time: 16:41:17
Date: 02/28/96

Contour
Node Scalar1

Color Index

0	0.163E+04
9	0.146E+04
8	0.128E+04
7	0.110E+04
6	0.927E+03
5	0.751E+03
4	0.574E+03
3	0.397E+03
2	0.221E+03
1	0.443E+02

Min = 4.426245E+01

Max = 1.810115E+03

Min ID= 10974

Max ID= 8187

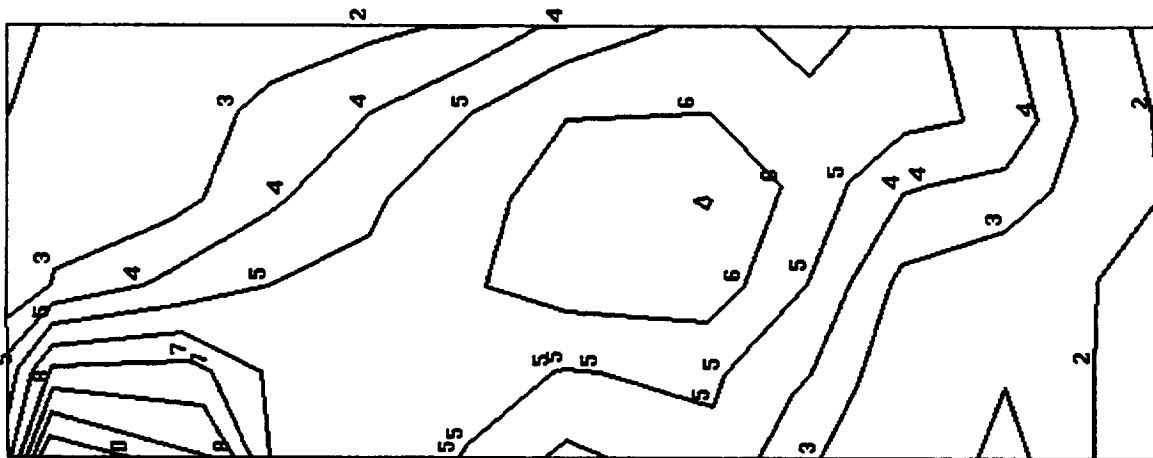
Contour_3:

Stress Tensor

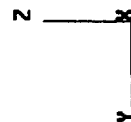
Von Mises

At Z1

Design_Gy=-20.6_Gx=-21.2
Static Subcase

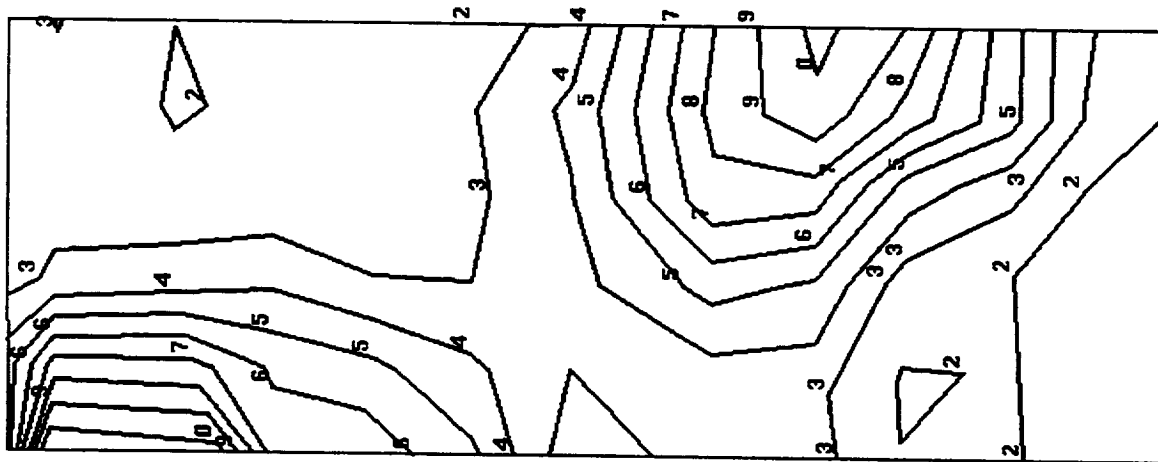


Metsat AMSU-A1
Radiator Panel



Time: 16:42:49
Date: 02/28/96

Metsat AMSU-A1
Radiator Panel



Contour
Node Scalar1

Color Index

—	0	0.135E+04
—	9	0.121E+04
—	8	0.106E+04
—	7	0.921E+03
—	6	0.778E+03
—	5	0.636E+03
—	4	0.493E+03
—	3	0.351E+03
—	2	0.208E+03
—	1	0.659E+02

Min = 6.586736E+01

Max = 1.490613E+03

Min ID= 10973

Max ID= 8187

Contour_4:

Stress Tensor

Von Mises

At 22

Design_Qy=-20.6_Qx=-21.2

Static Subcase

Time: 15:48:17
Date: 02/28/96

Contour
Node Scalar1

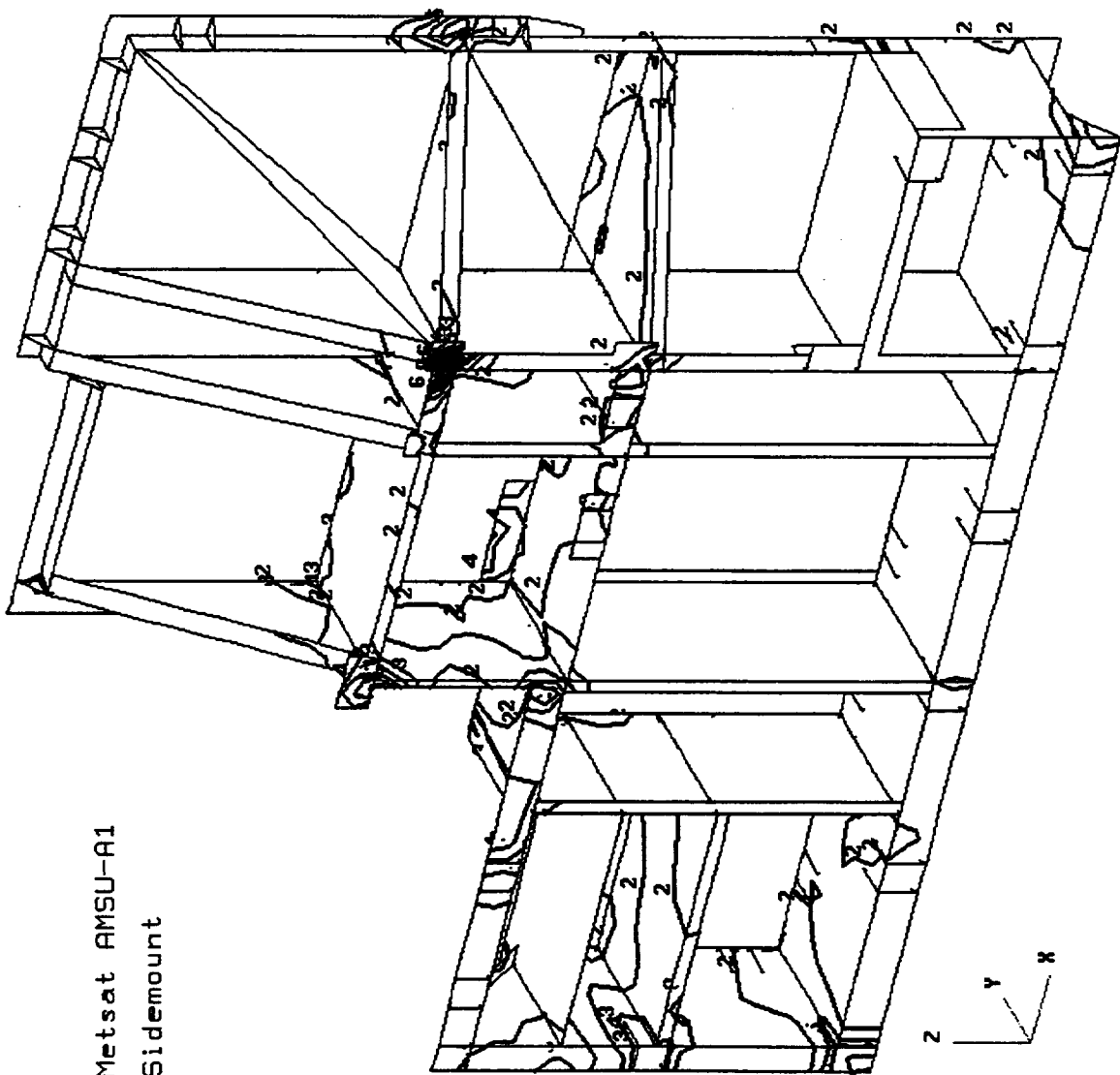
Color Index

- 0 0.891E+04
- 9 0.792E+04
- 8 0.693E+04
- 7 0.595E+04
- 6 0.496E+04
- 5 0.398E+04
- 4 0.299E+04
- 3 0.200E+04
- 2 0.102E+04
- 1 0.330E+02

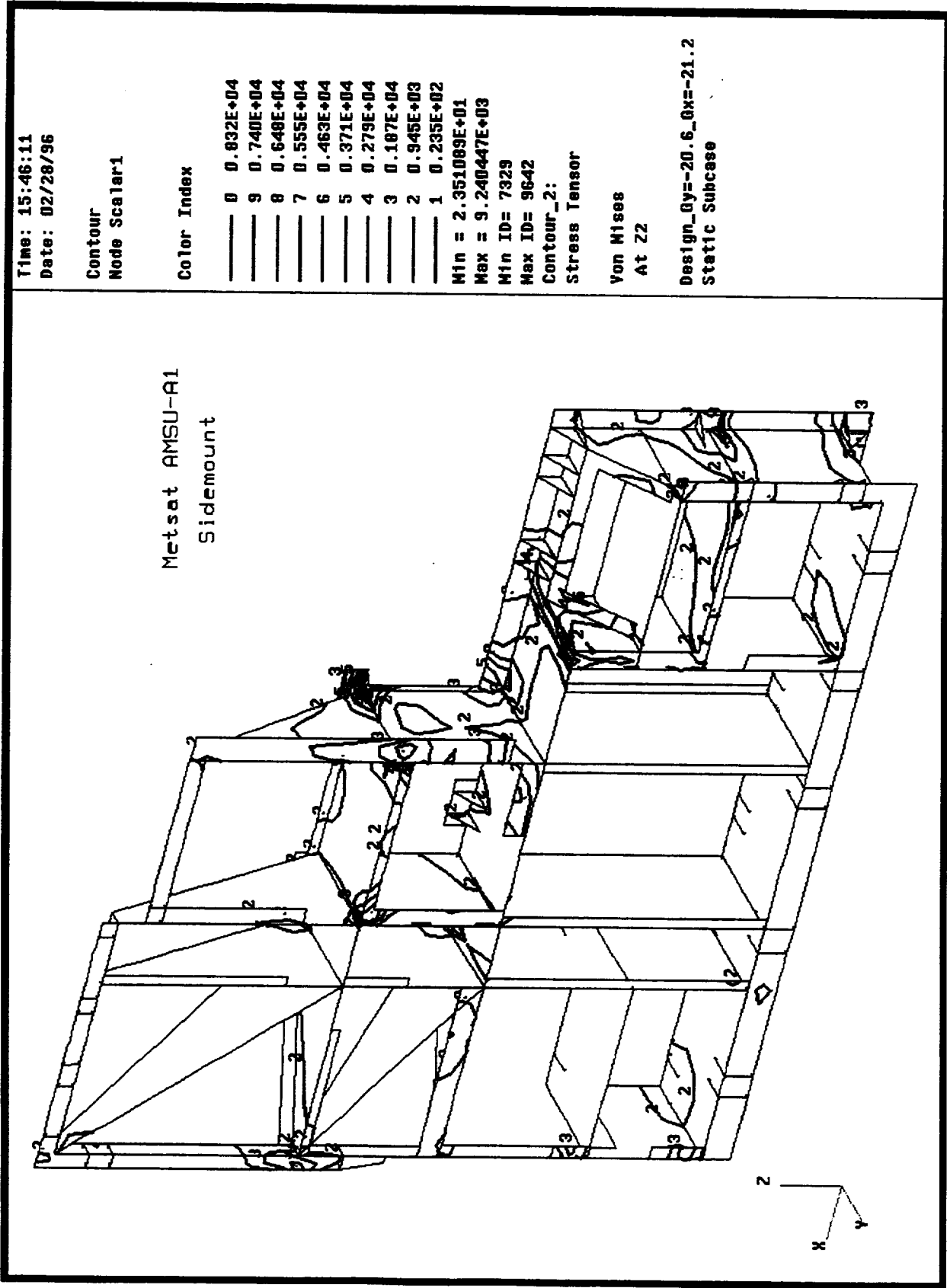
Min = 3.304292E+01
Max = 9.892375E+03
Min ID= 10151
Max ID= 8312
Contour_1:
Stress Tensor

Von Mises
At Z1

Design_Qy=-20.6_Qx=-21.2
Static Subcase

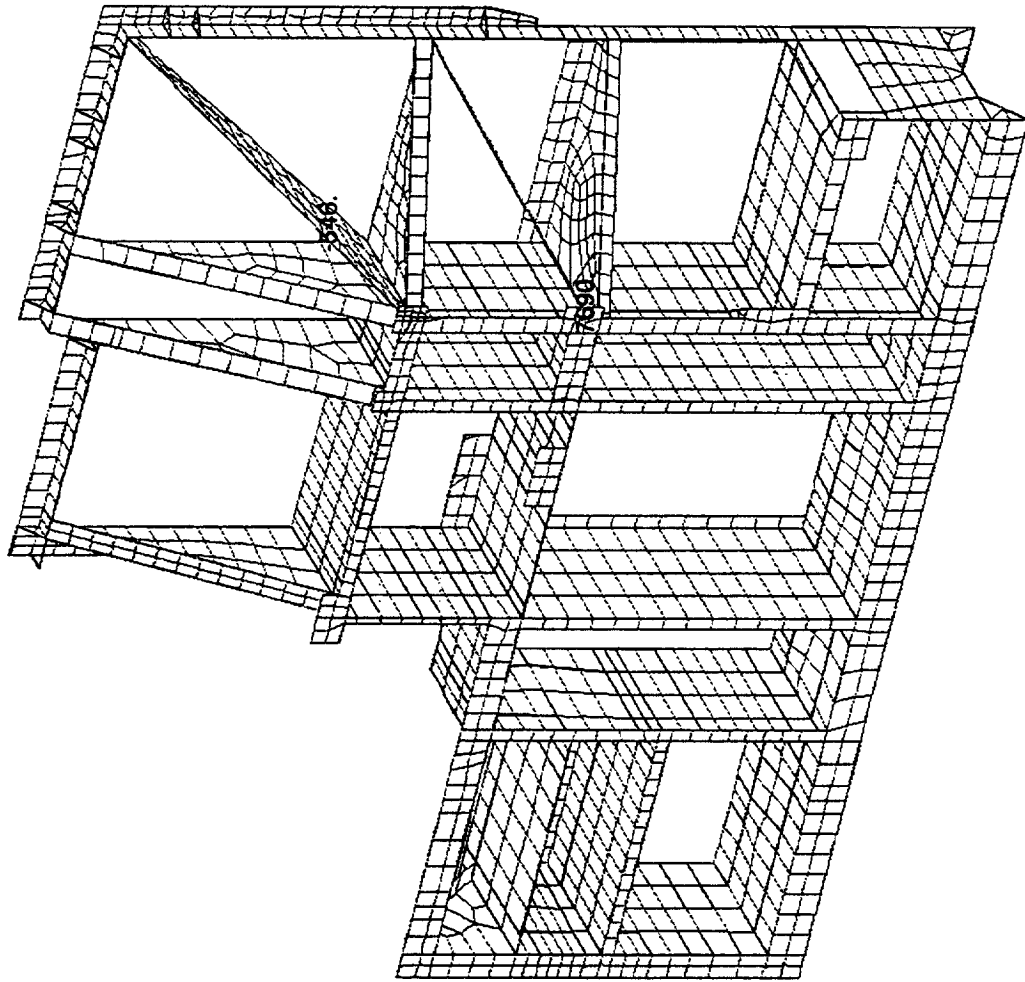


Metsat AMSU-A1
Sidemount



FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 08:28:08

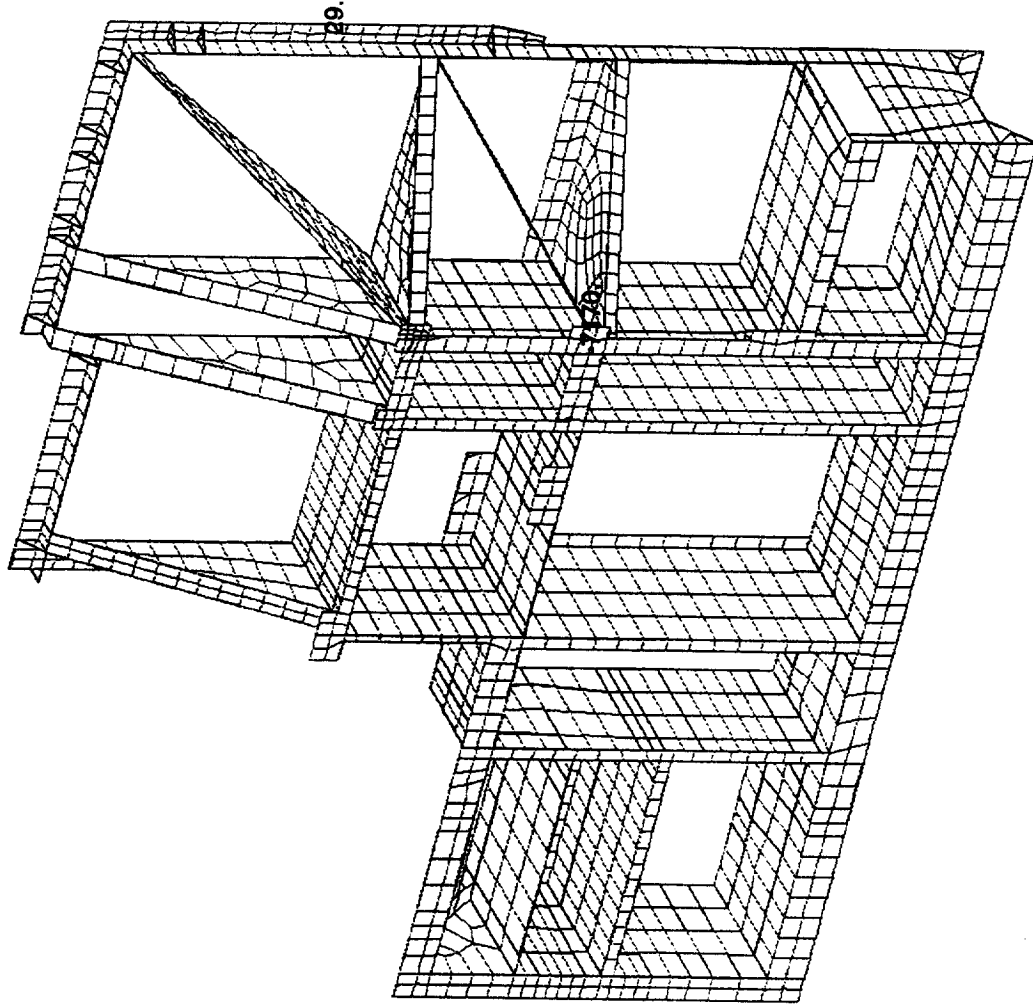
Sidemount Beams



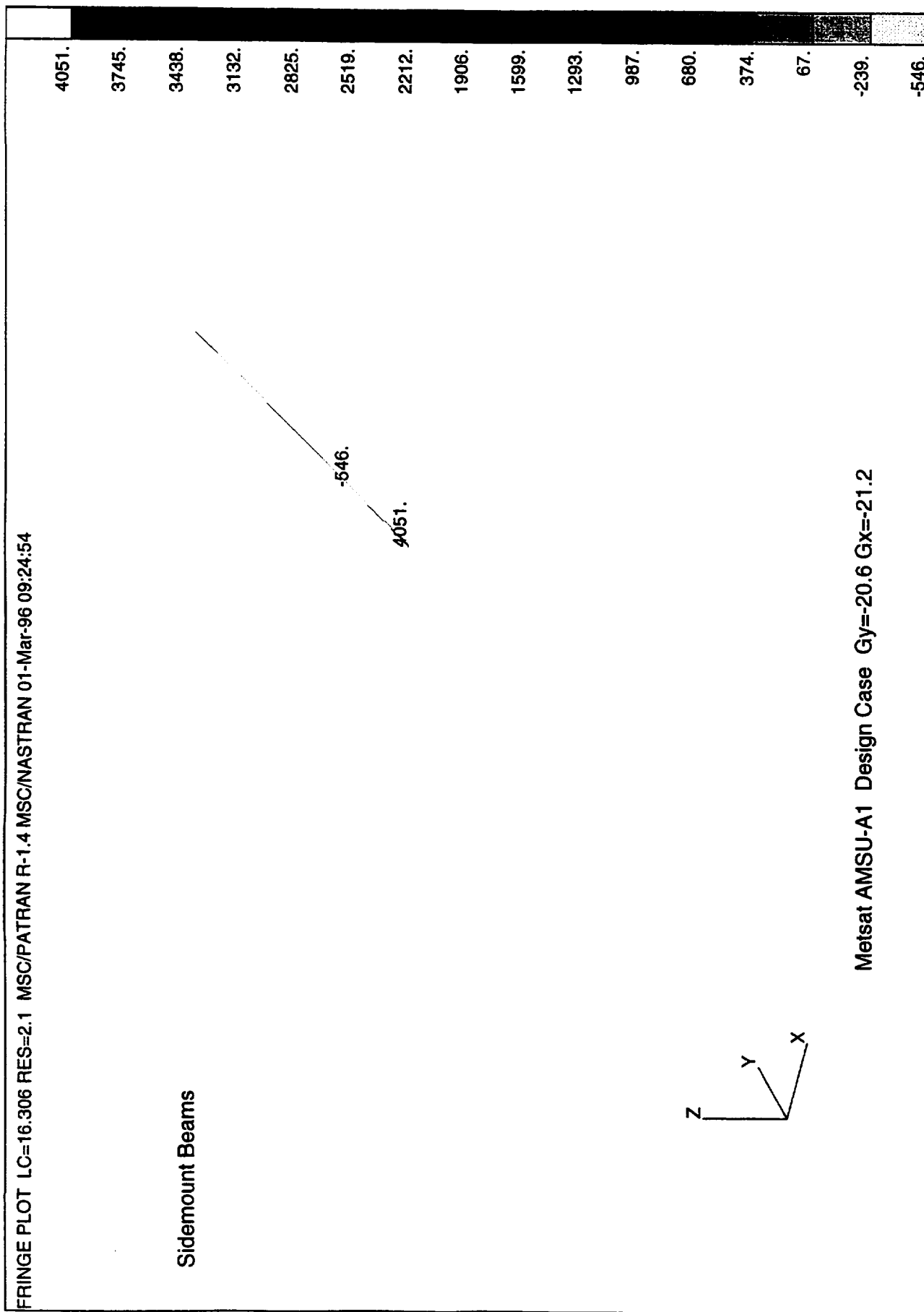
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2

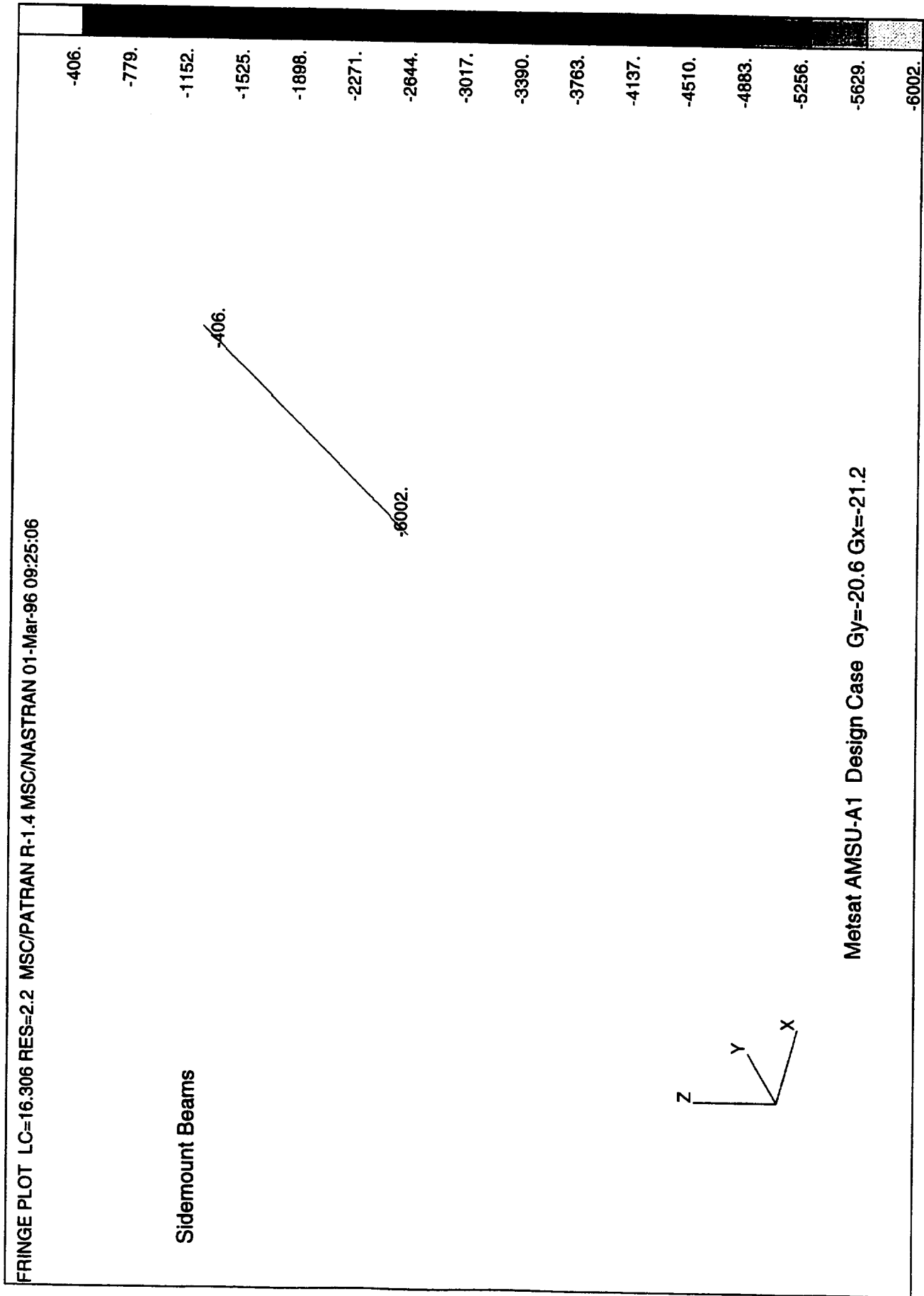
FRINGE PLOT LC=16.307 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 08:45:07

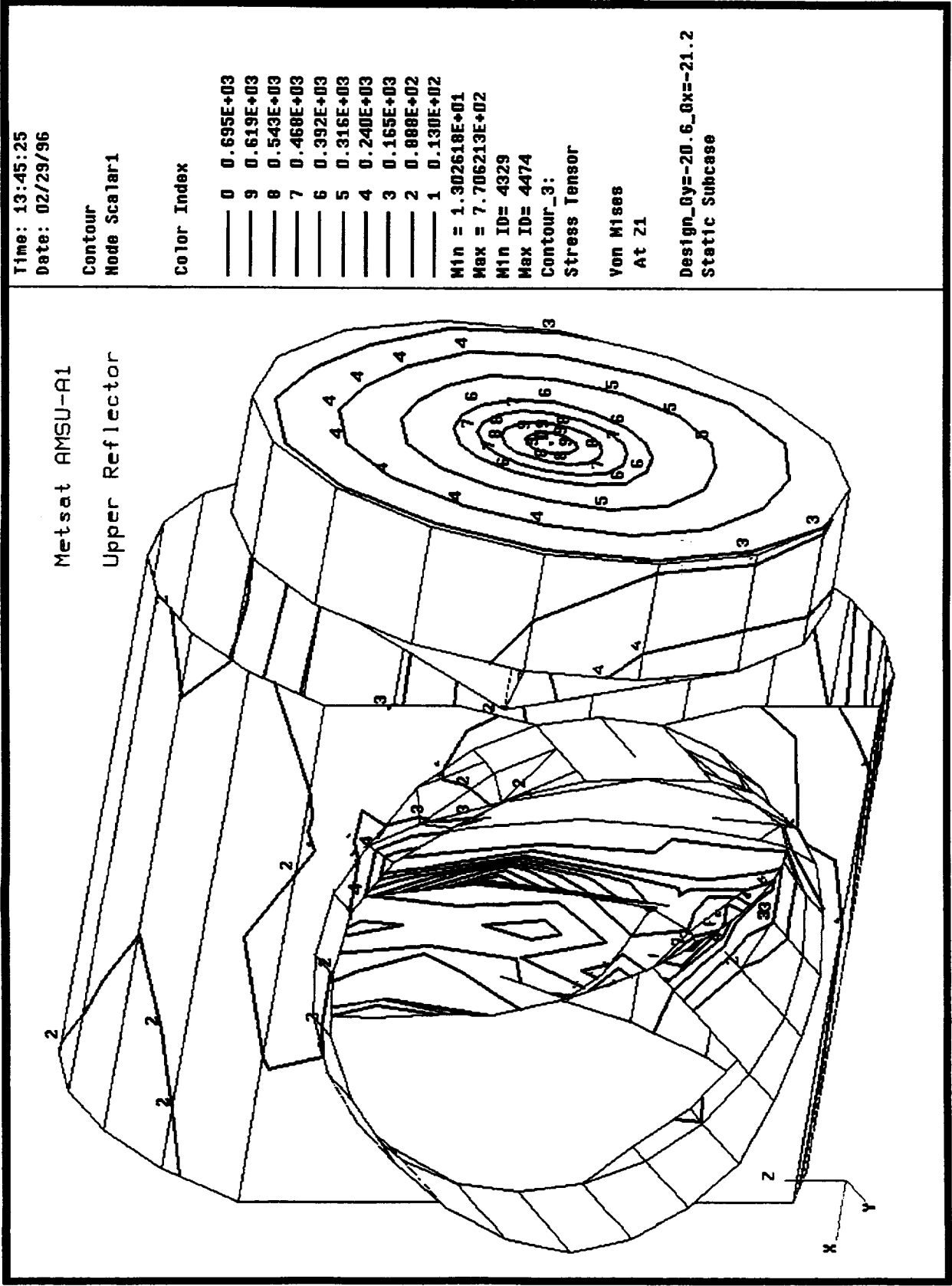
Sidemount Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2







Time: 13:44:47
Date: 02/29/96

Contour
Node Scalar1

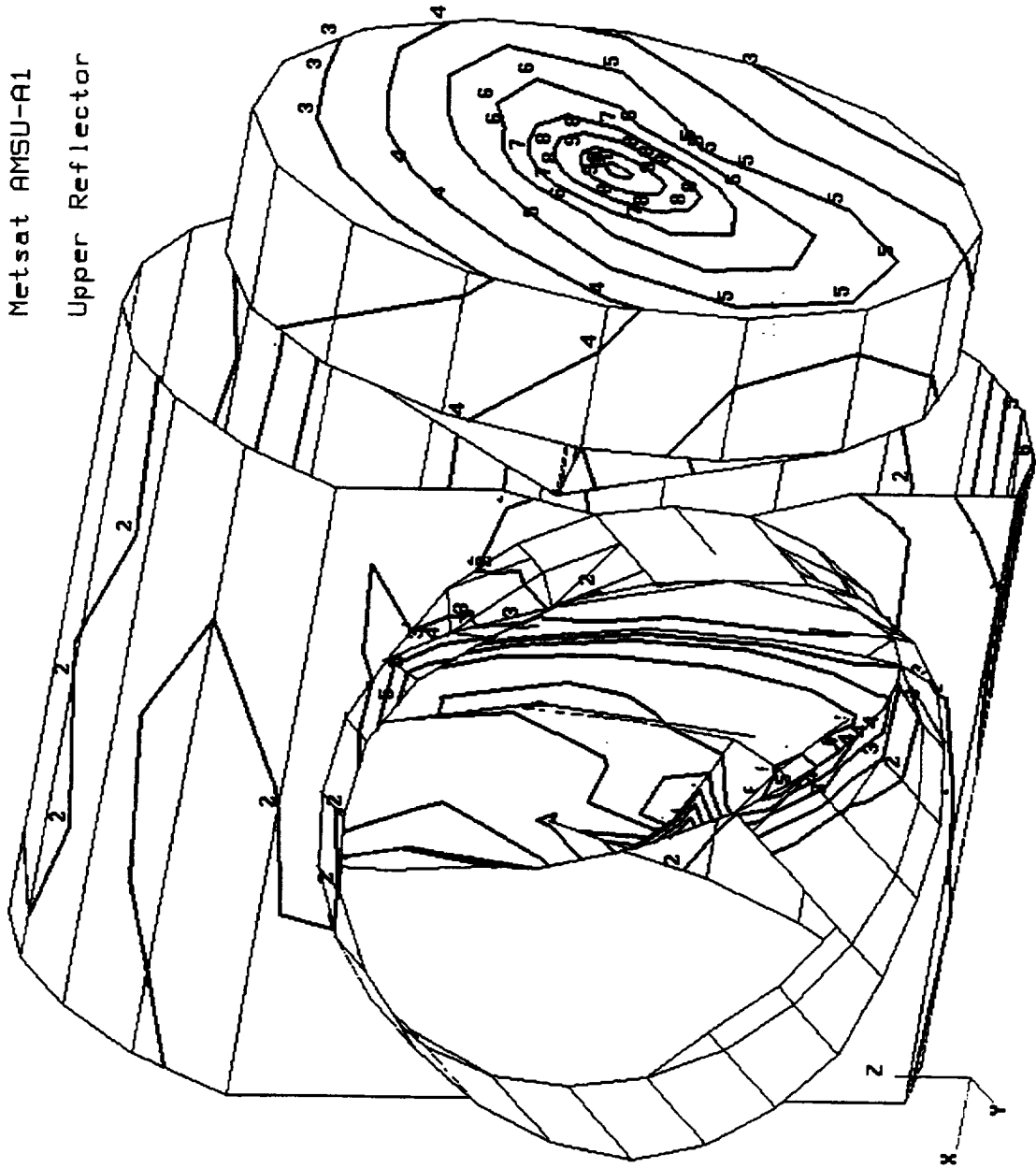
Color Index

— 0	0.633E+03
— 9	0.565E+03
— 8	0.496E+03
— 7	0.427E+03
— 6	0.358E+03
— 5	0.289E+03
— 4	0.220E+03
— 3	0.151E+03
— 2	0.825E+02
— 1	0.136E+02

Min = 1.364036E+01
Max = 7.022717E+02
Min ID= 4329
Max ID= 4695
Contour_4:
Stress Tensor

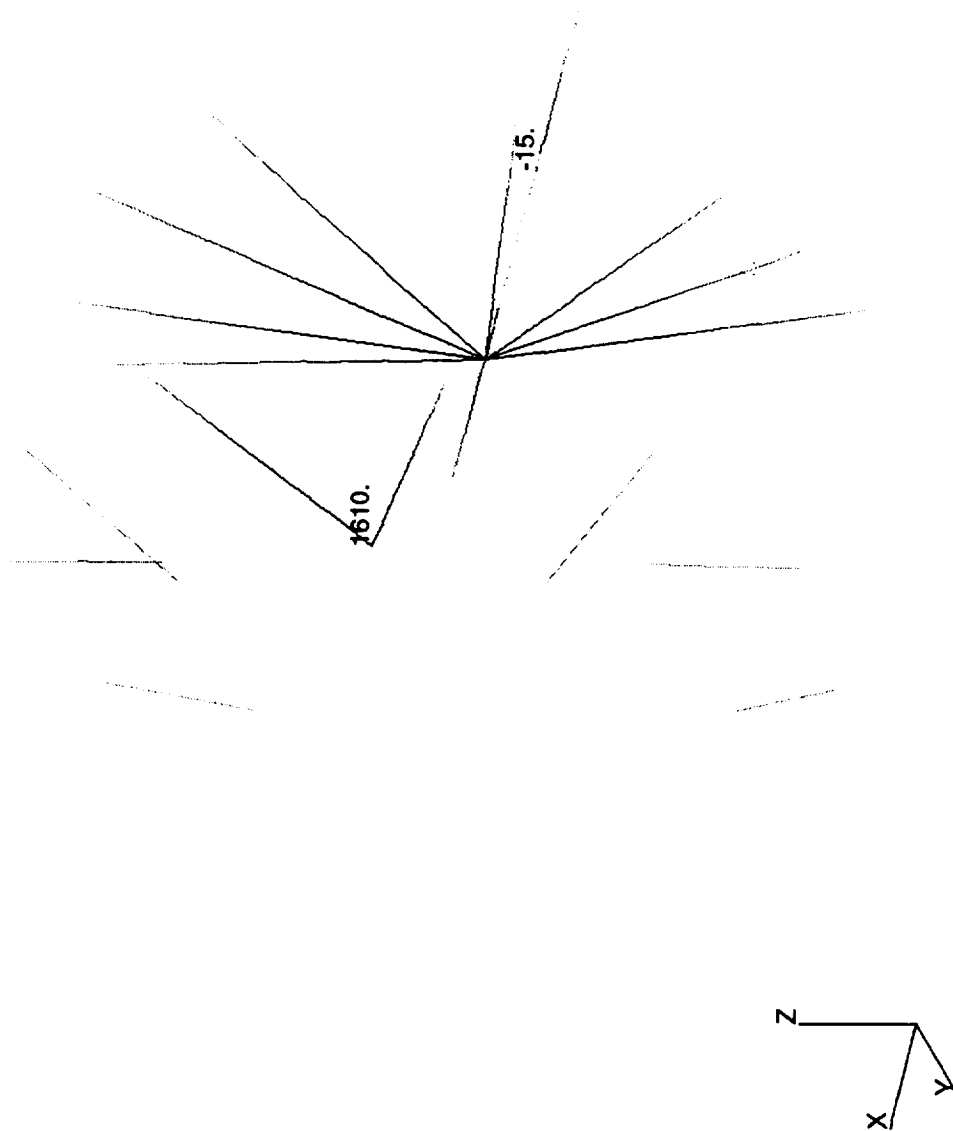
Von Mises
At 22

Design_Qy=-20.6_Qx=-21.2
Static Subcase

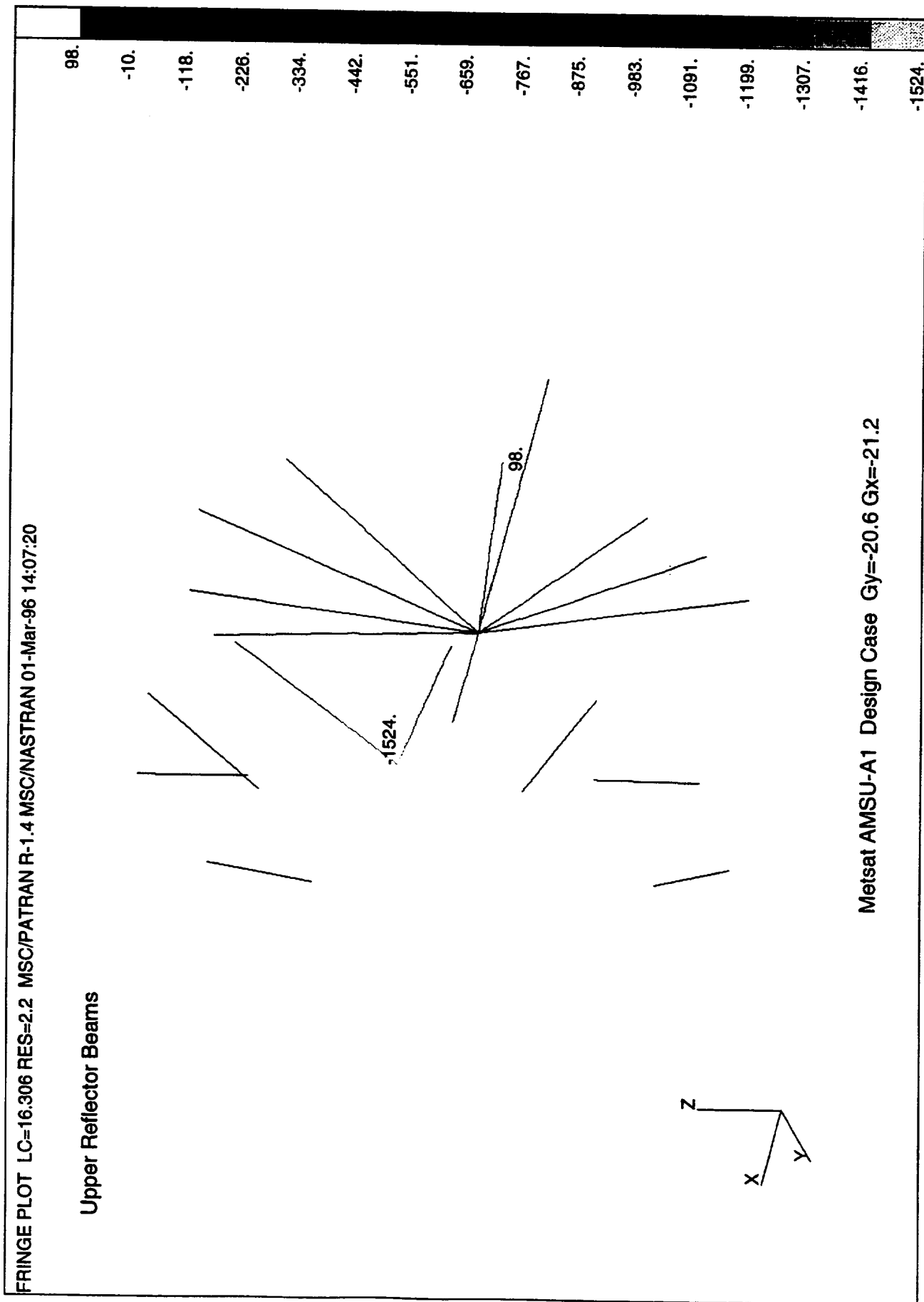


FRINGE PLOT LC=16.306 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:07:11

Upper Reflector Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=-21.2



Time: 16:02:04
Date: 02/29/96

Metsat AMSU-A1
Lower Baseplate

Contour
Node Scalar1

Color Index

0	0.695E+03
1	0.623E+03
2	0.551E+03
3	0.480E+03
4	0.408E+03
5	0.336E+03
6	0.265E+03
7	0.193E+03
8	0.121E+03
9	0.493E+02

Min = 4.928622E+01

Max = 7.666940E+02

Min ID= 1172

Max ID= 1075

Contour_7:

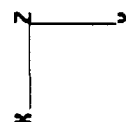
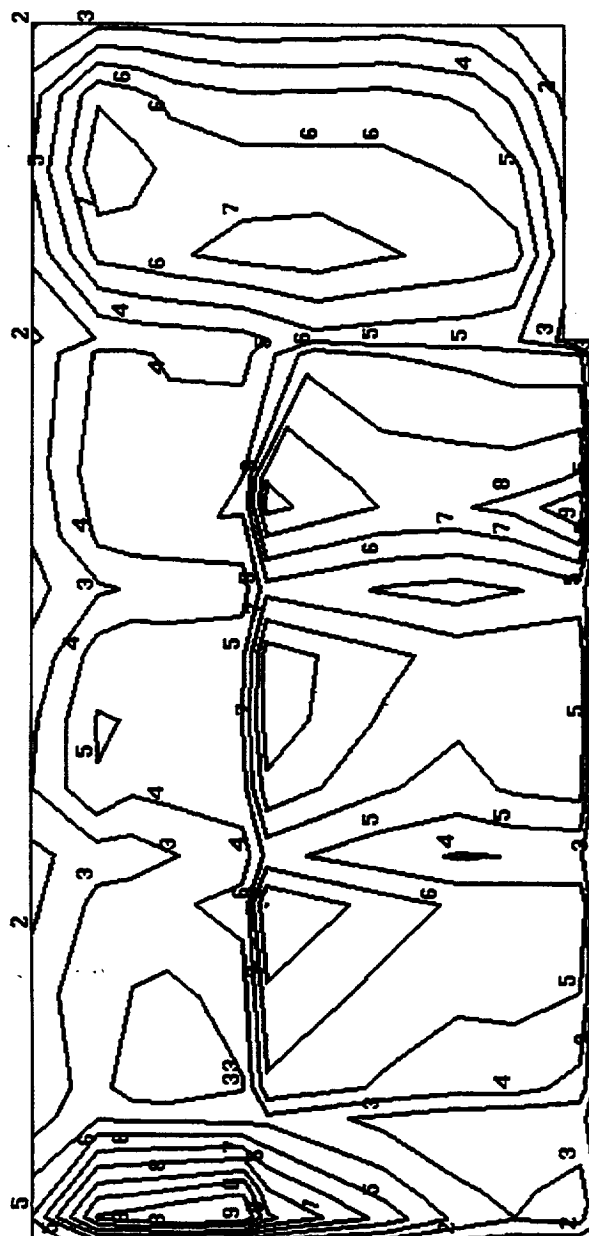
Stress Tensor

Von Mises

At Z1

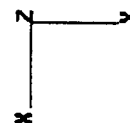
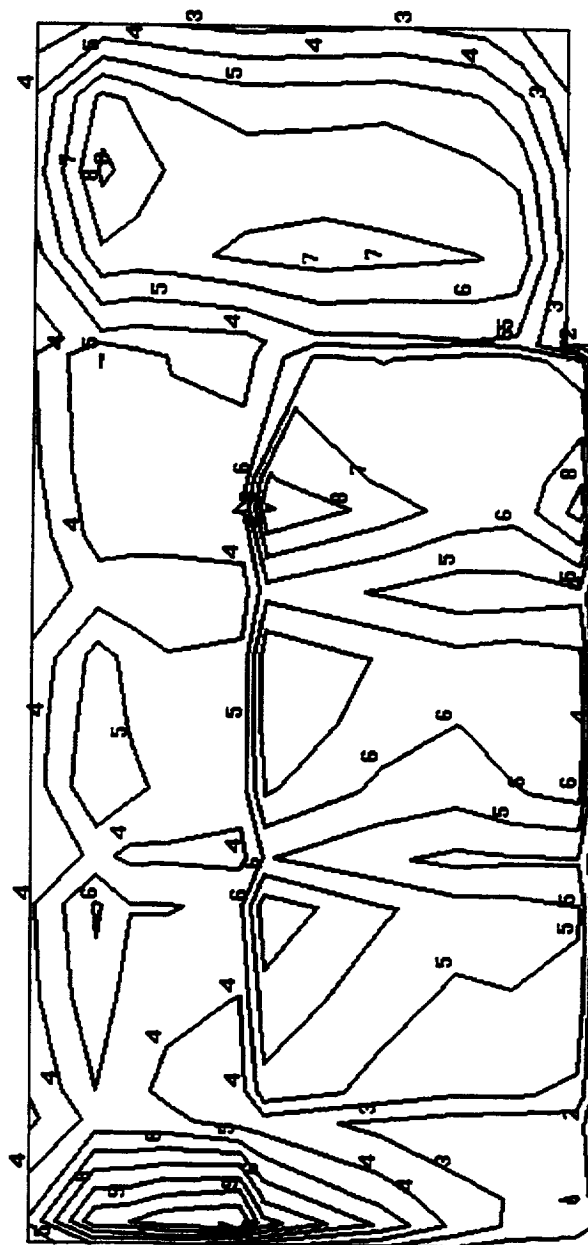
Design_0y=-20.6_0x=21.2

Static Subcase



Metsat AMSU-A1

Lower Baseplate



Time: 16:01:41
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.745E+03
1	0.666E+03
2	0.587E+03
3	0.509E+03
4	0.430E+03
5	0.352E+03
6	0.273E+03
7	0.195E+03
8	0.116E+03
9	0.376E+02

Min = 3.762701E+01

Max = 8.231298E+02

Min ID= 1191

Max ID= 1094

Contour_8:

Stress Tensor

Von Mises

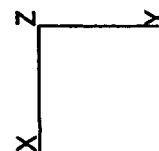
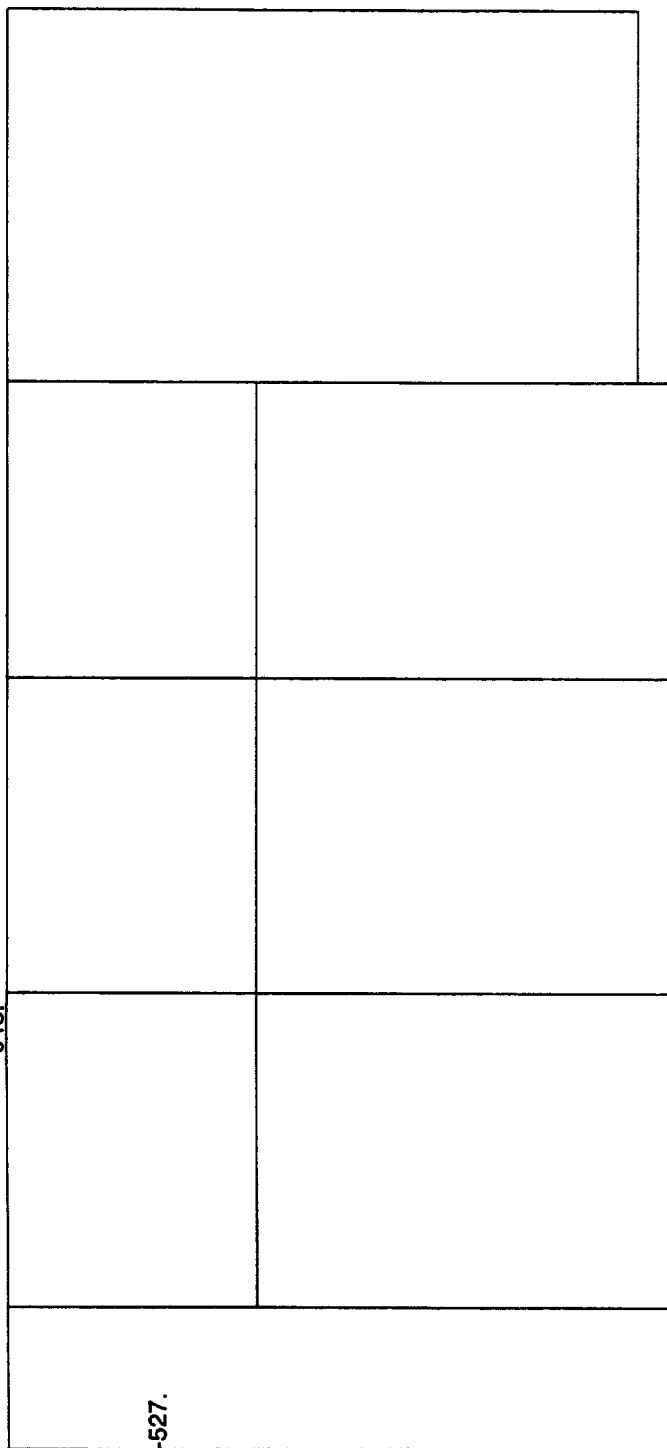
At Z2

Design_Oy=-20.6_Ox=21.2
Static Subcase

FRINGE PLOT LC=14,308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:49:49

Lower Baseplate Beams

946.

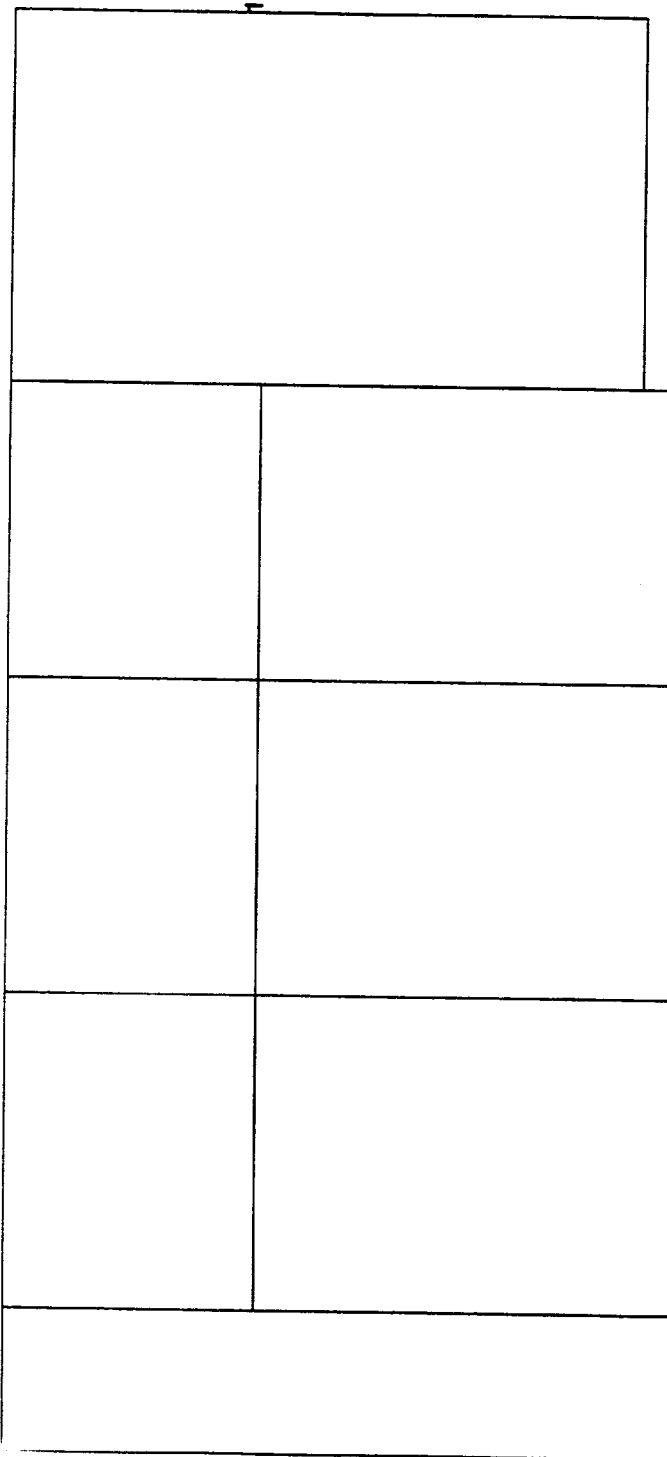


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:50:02

Lower Baseplate Beams

-1284.



158

158.

61.

-35.

-131.

-227.

-323.

-419.

-515.

-611.

-708.

-804.

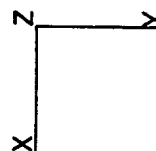
-900.

-996.

-1092.

-1188.

-1284.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 15:14:39
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.367E+04
9	0.327E+04
8	0.287E+04
7	0.247E+04
6	0.208E+04
5	0.168E+04
4	0.128E+04
3	0.884E+03
2	0.486E+03
1	0.887E+02

Min = 8.871942E+01
Max = 4.064117E+03

Min ID= 1172

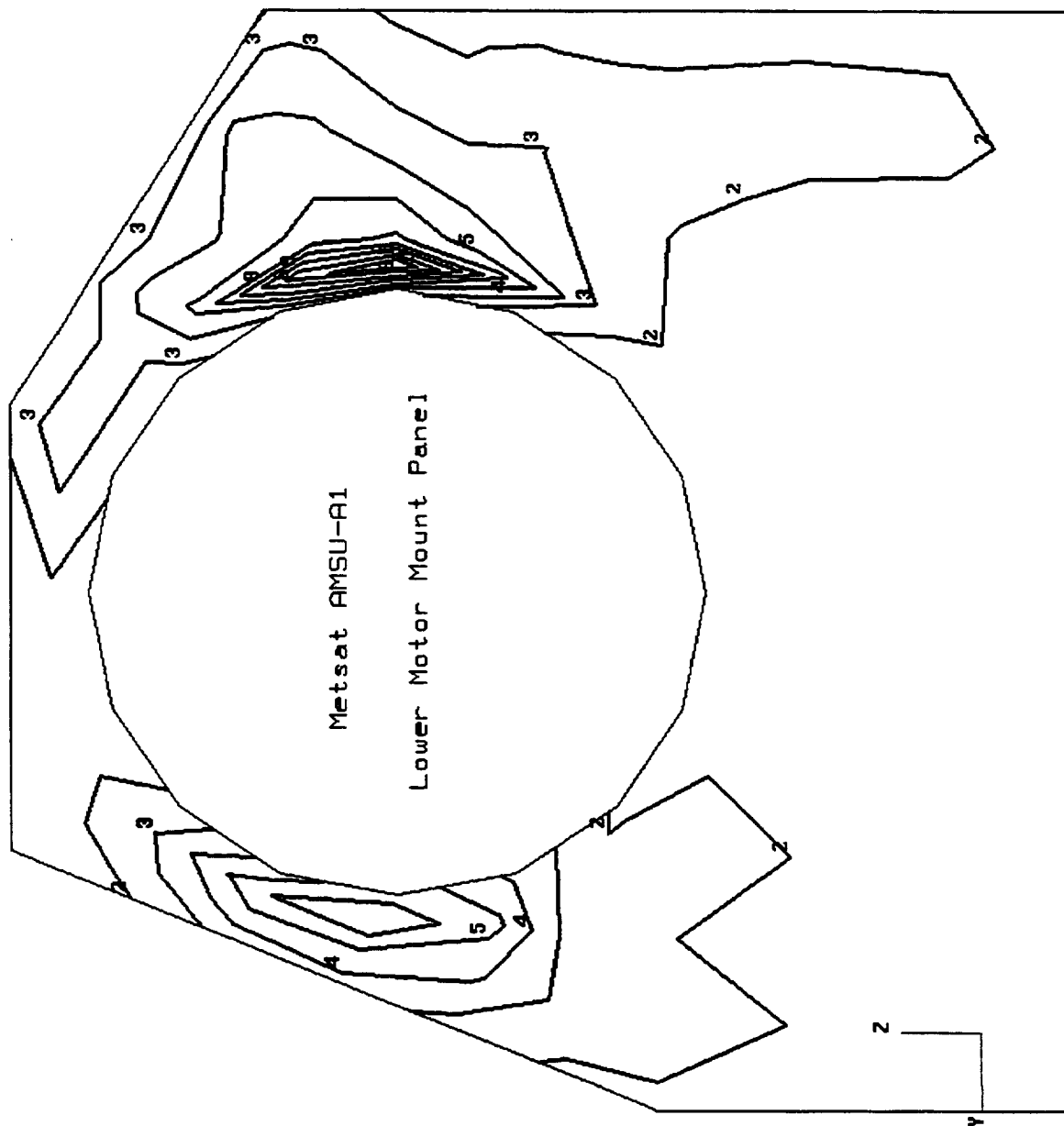
Max ID= 2880

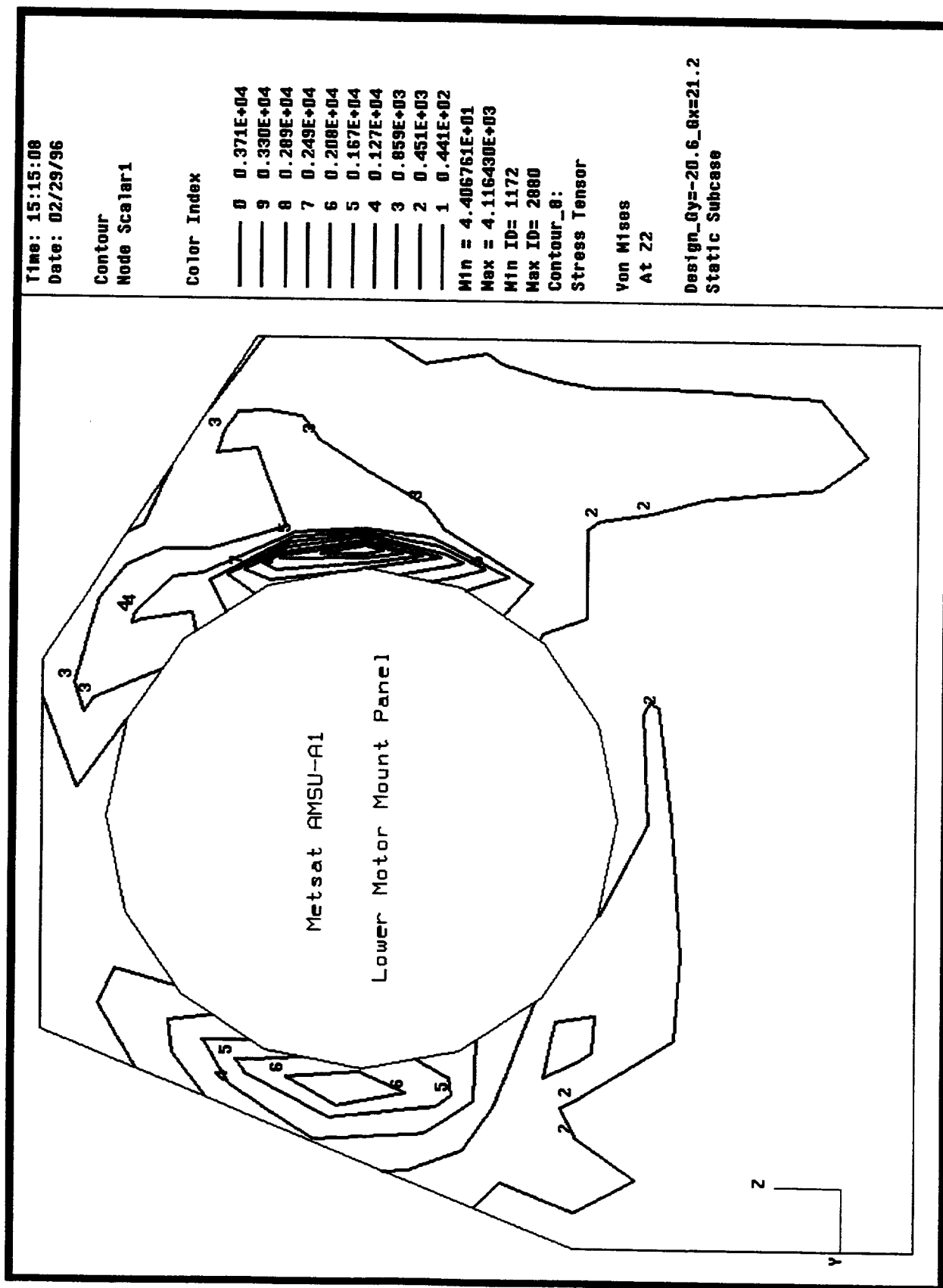
Contour_7:

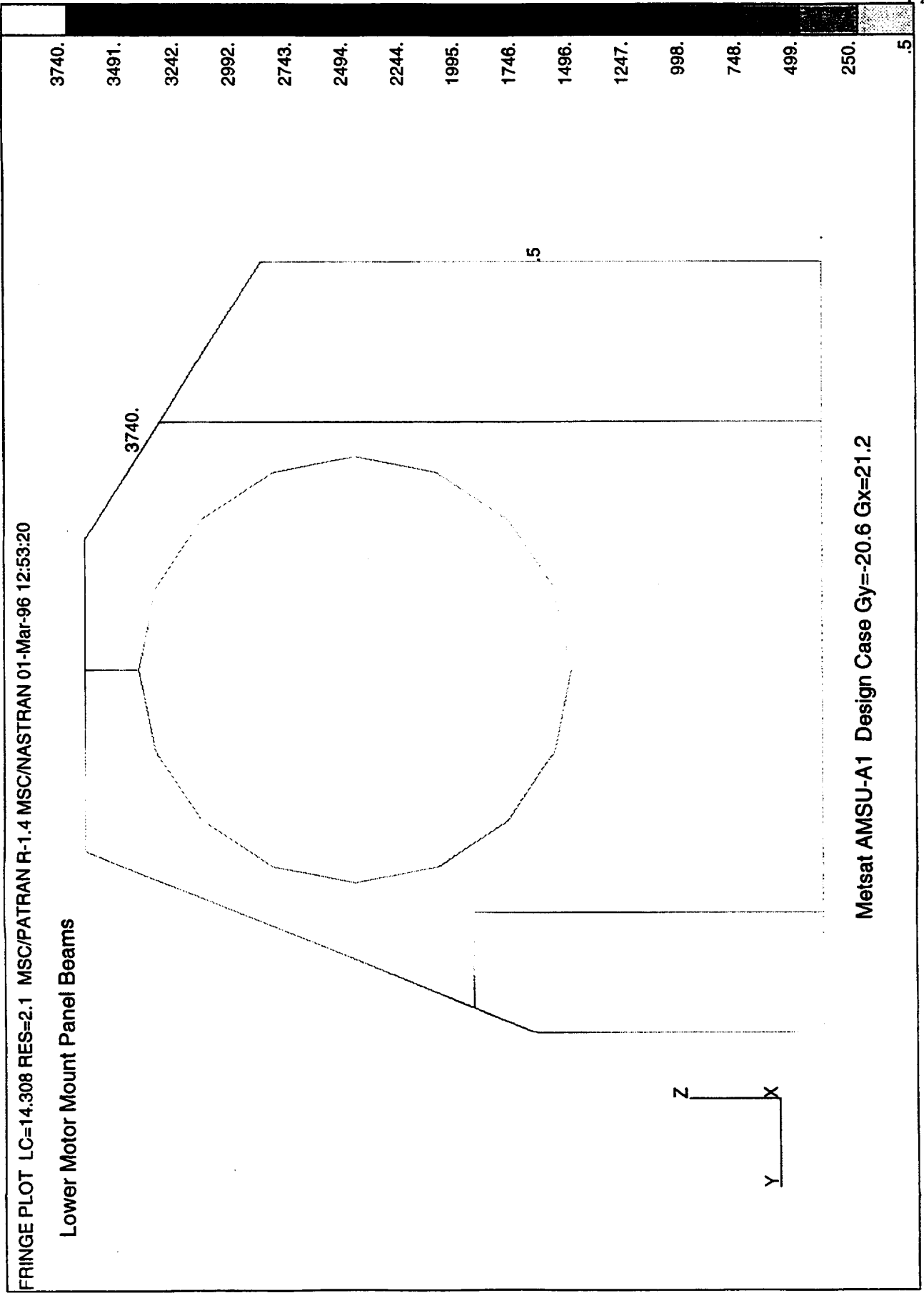
Stress Tensor

Von Mises
At 21

Design_Qy=-20.6_Qx=21.2
Static Subcase

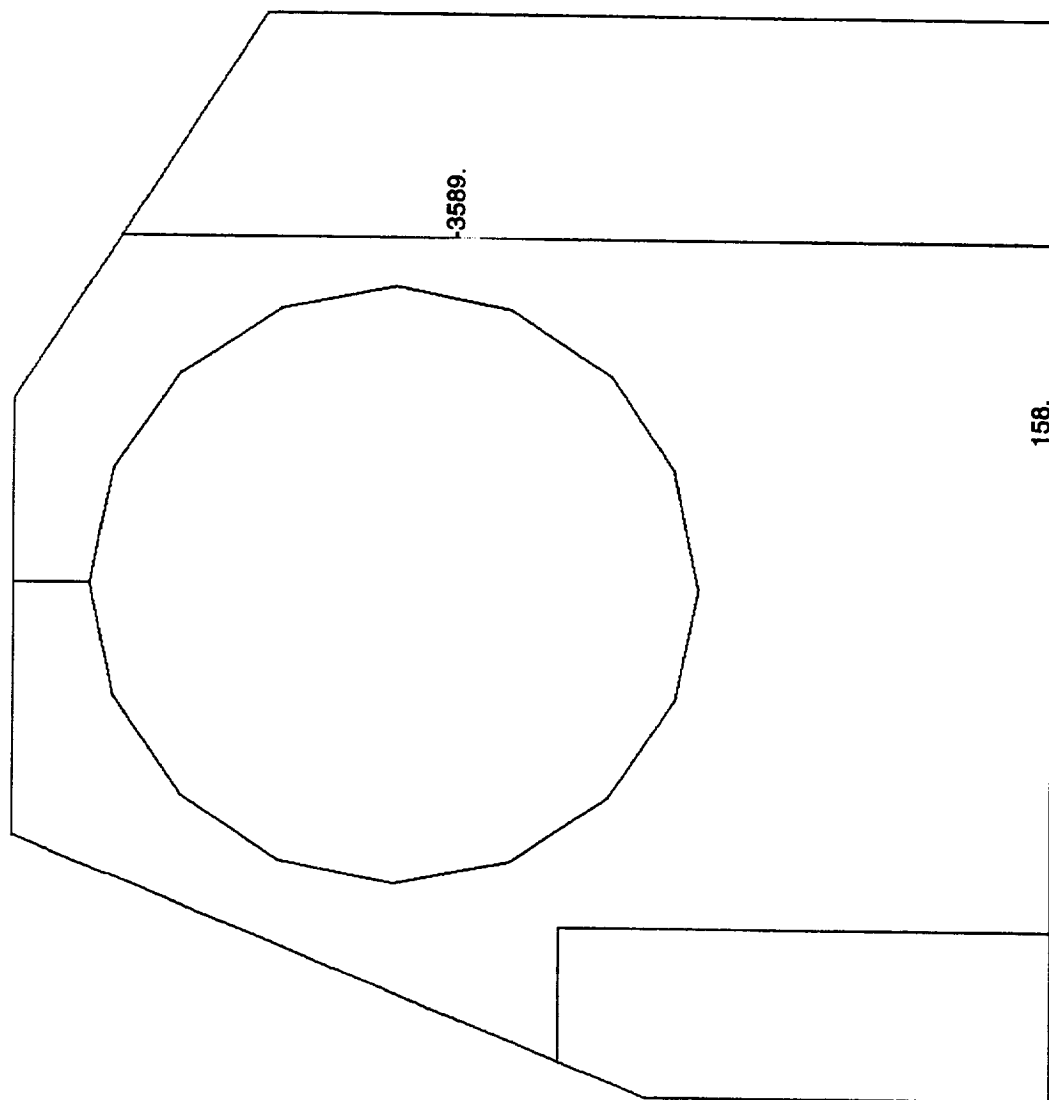






FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:53:27

Lower Motor Mount Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 15:20:19
Date: 02/29/96

Contour
Node Scalar1

Color Index

— 0 0.116E+04
— 9 0.104E+04
— 8 0.916E+03
— 7 0.792E+03
— 6 0.668E+03
— 5 0.544E+03
— 4 0.421E+03
— 3 0.297E+03
— 2 0.173E+03
— 1 0.490E+02

Min = 4.898047E+01

Max = 1.287685E+03

Min ID= 2779

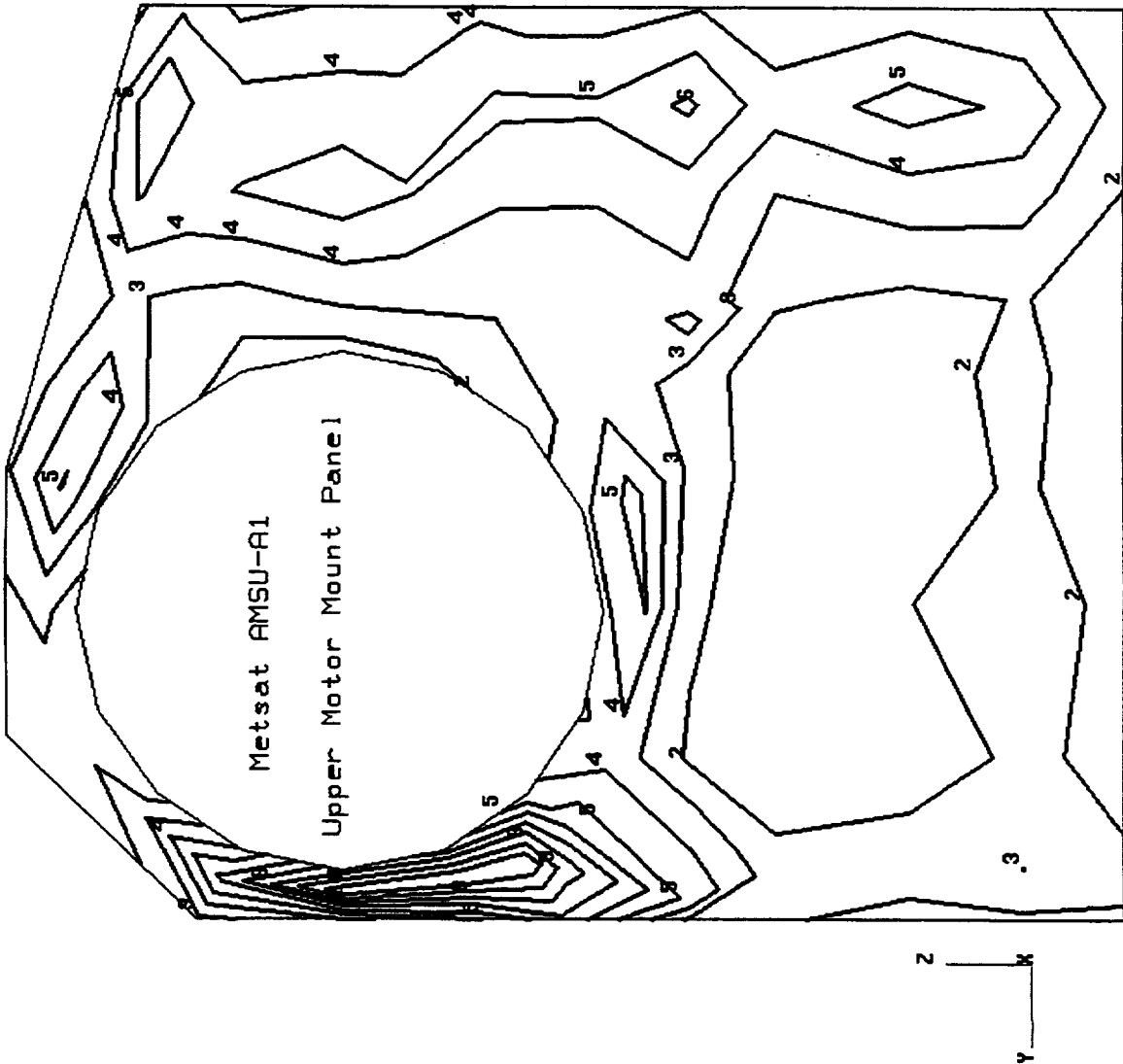
Max ID= 2773

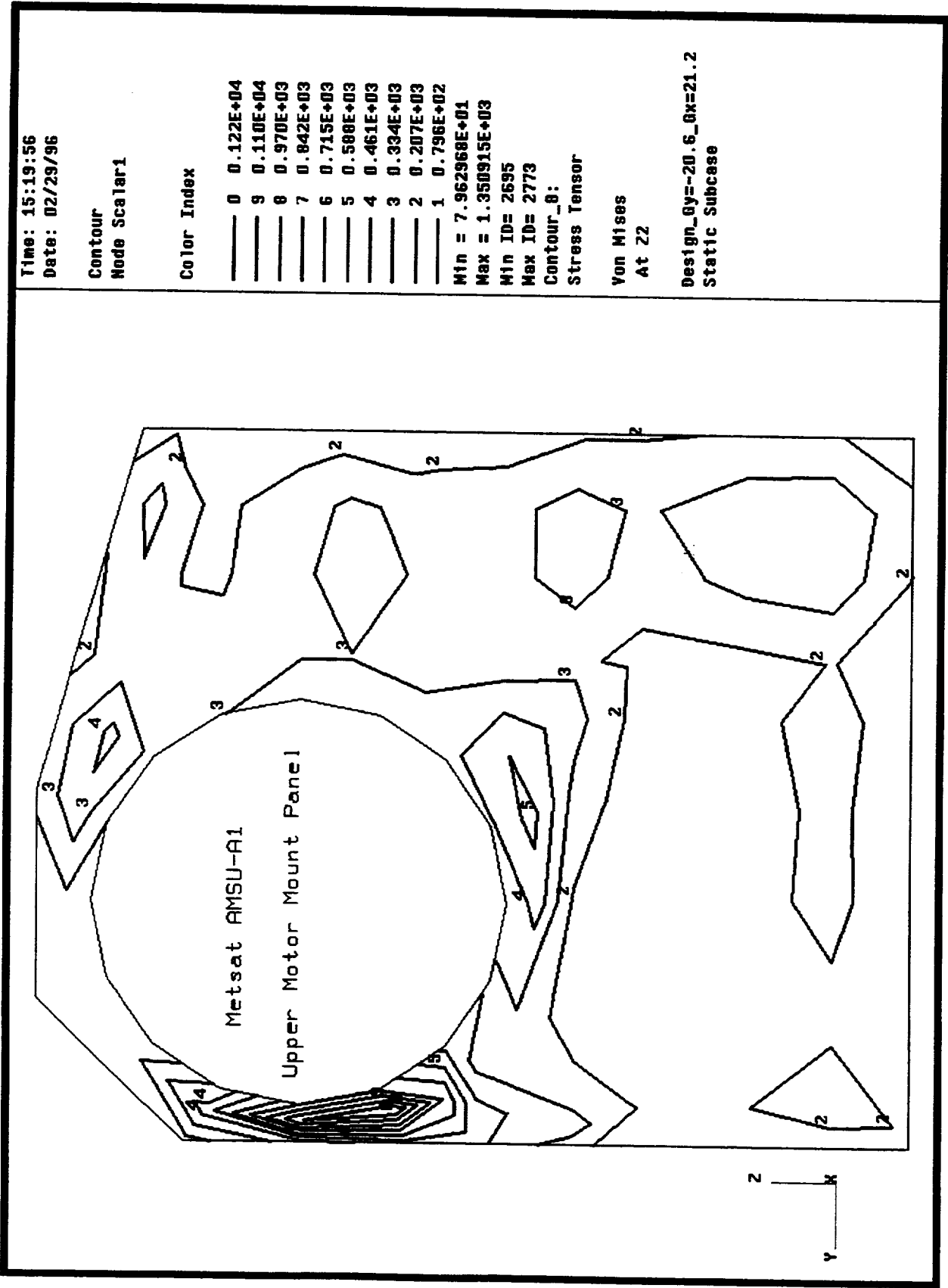
Contour_7:

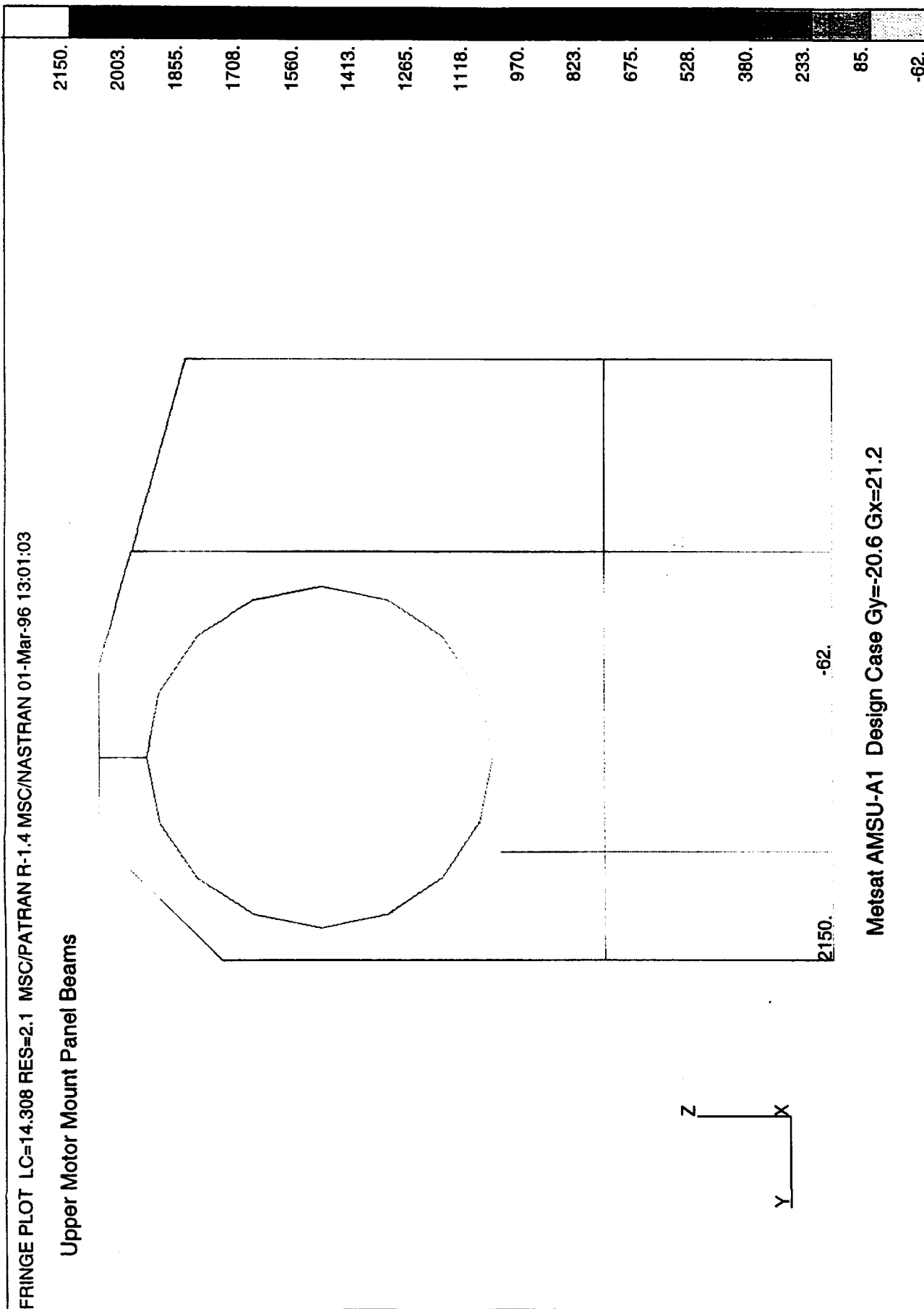
Stress Tensor

Von Mises
At 21

Design_Qy=-20.6_Qx=21.2
Static Subcase

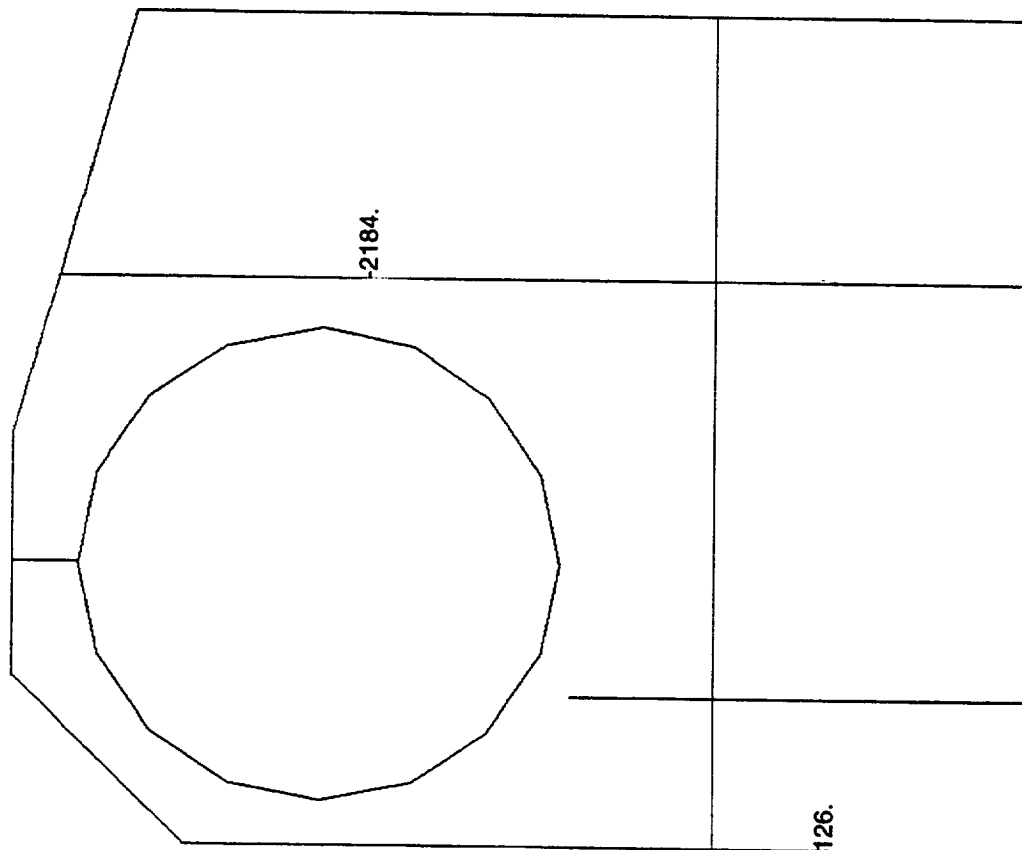






FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:01:09

Upper Motor Mount Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 14:58:10
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.112E+04
—	9	0.100E+04
—	8	0.992E+03
—	7	0.780E+03
—	6	0.668E+03
—	5	0.555E+03
—	4	0.443E+03
—	3	0.331E+03
—	2	0.219E+03
—	1	0.106E+03

Min = 1.062534E+02

Max = 1.229137E+03

Min ID= 1191

Max ID= 1931

Contour_7:

Stress Tensor

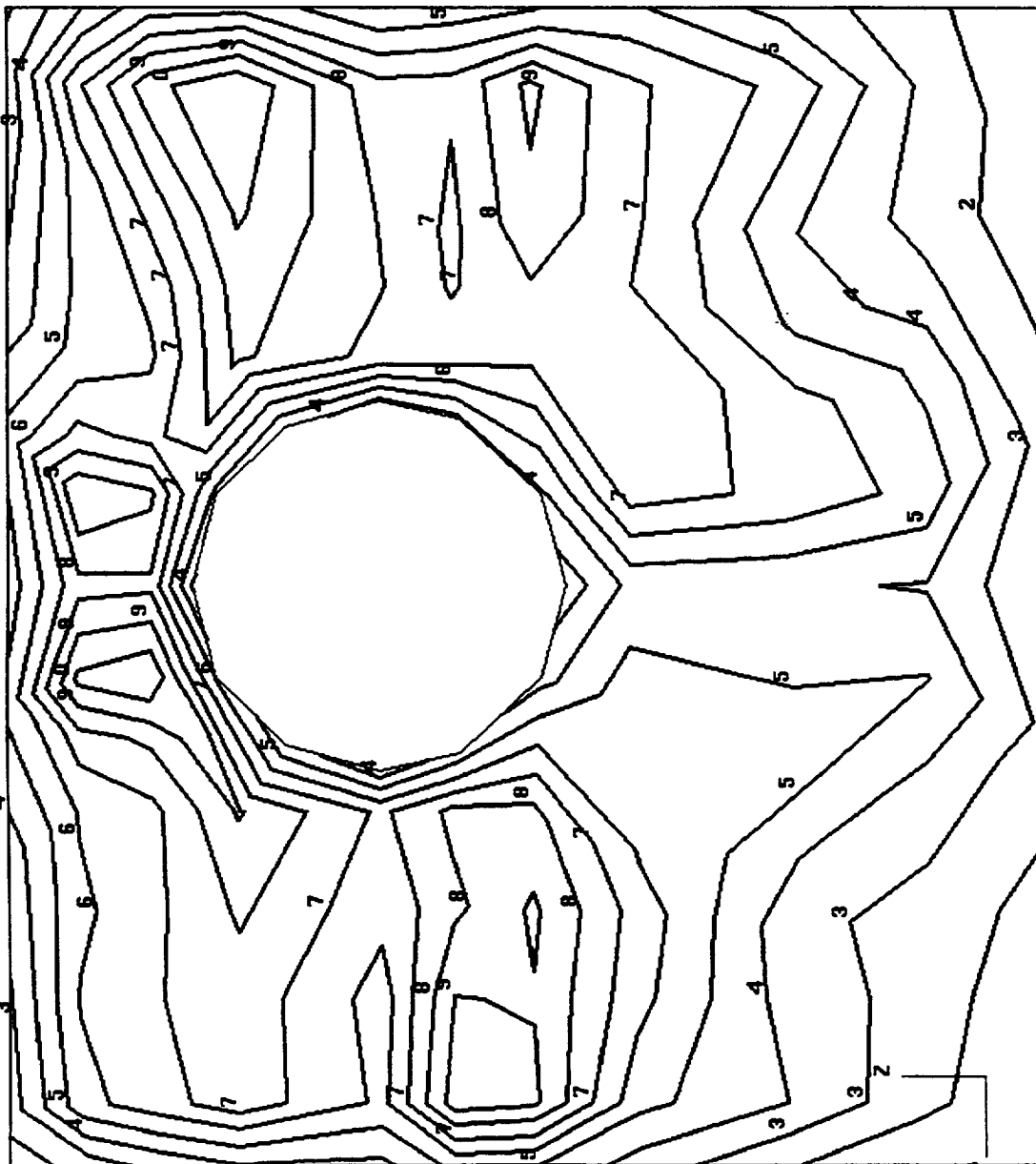
Von Mises

At 21

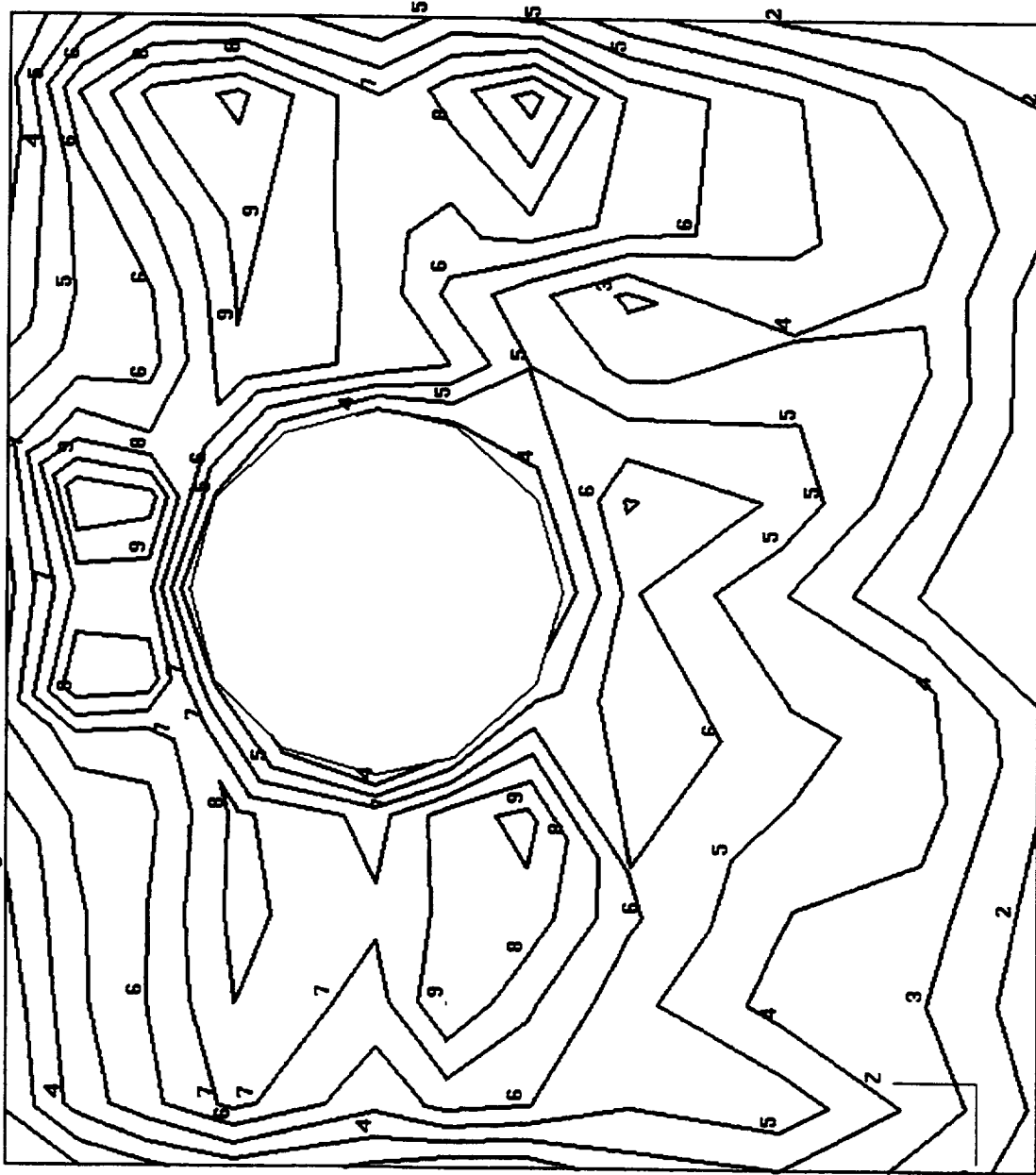
Design_Gy=-20.6_Ox=21.2

Static Subcase

Metsat AMSU-A1 Lower Front Panel



Metsat AMSU-A1 Lower Front Panel



Time: 14:57:44
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.116E+04
—	9	0.105E+04
—	8	0.927E+03
—	7	0.808E+03
—	6	0.690E+03
—	5	0.571E+03
—	4	0.452E+03
—	3	0.333E+03
—	2	0.214E+03
—	1	0.957E+02

Min = 9.569570E+01

Max = 1.283546E+03

Min ID= 1100

Max ID= 1922

Contour_8:

Stress Tensor

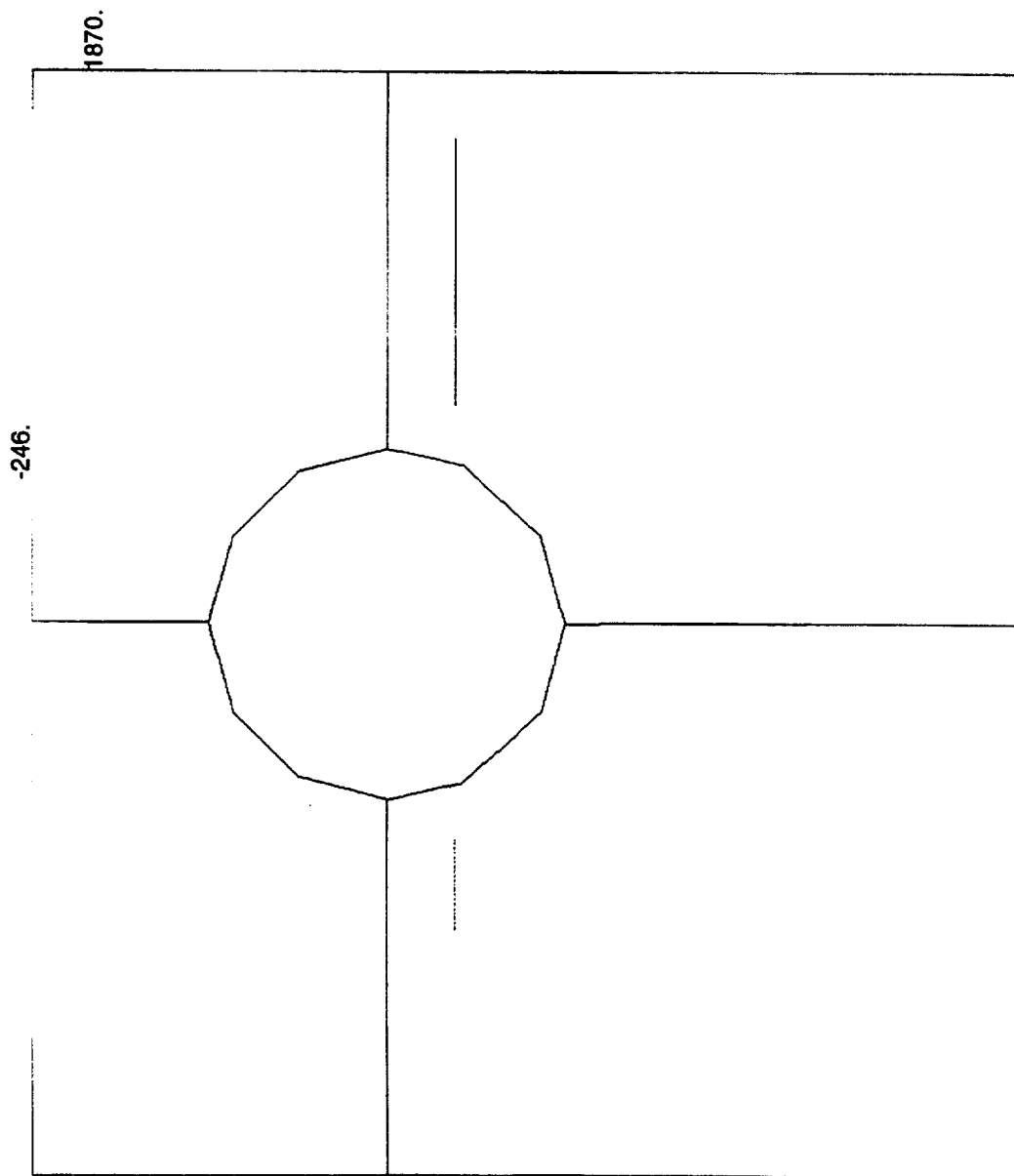
Von Mises

At 22

Design_0y=-20.6_0x=21.2

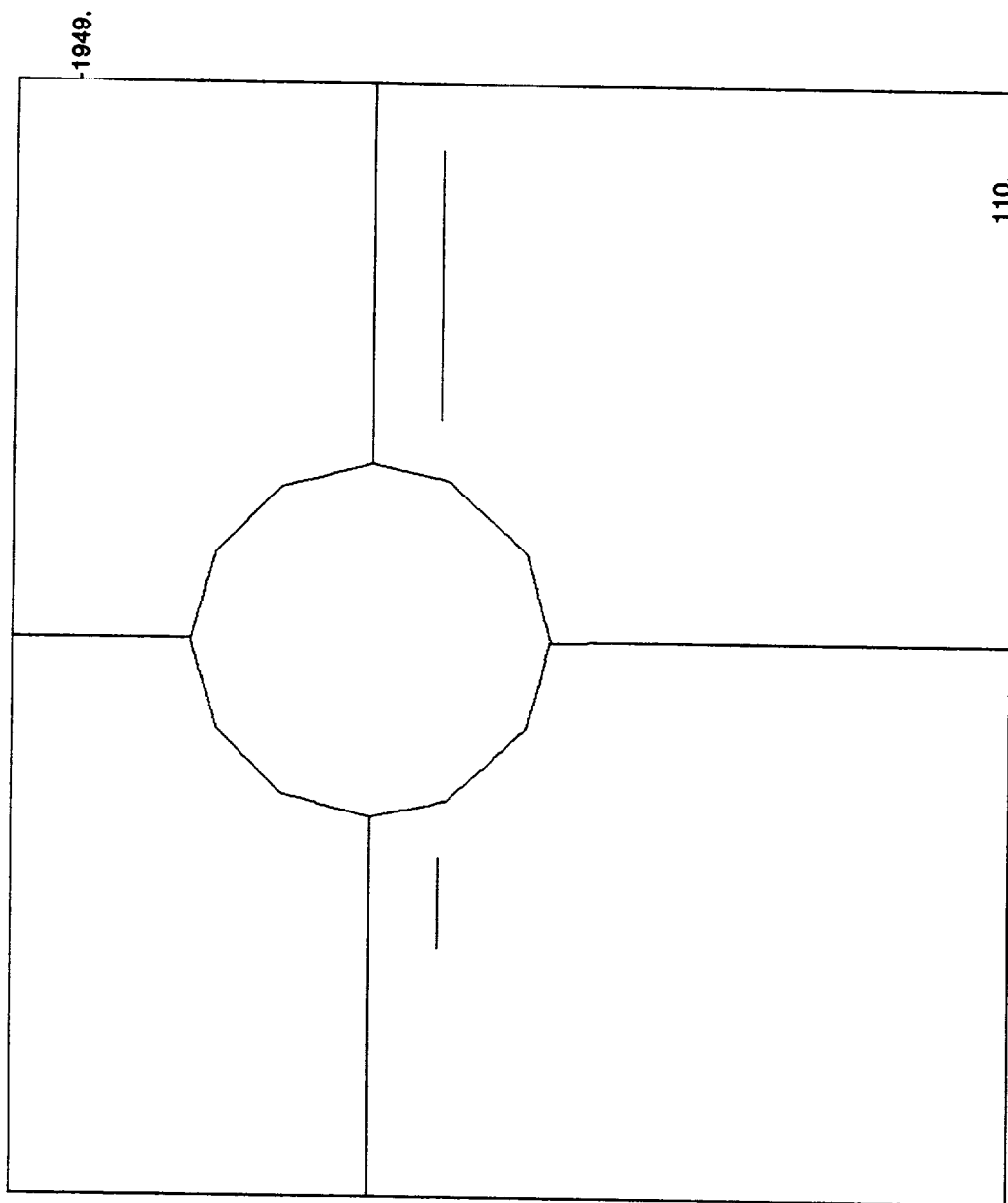
Static Subcase

FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:29:29
Lower Front Panel Beams

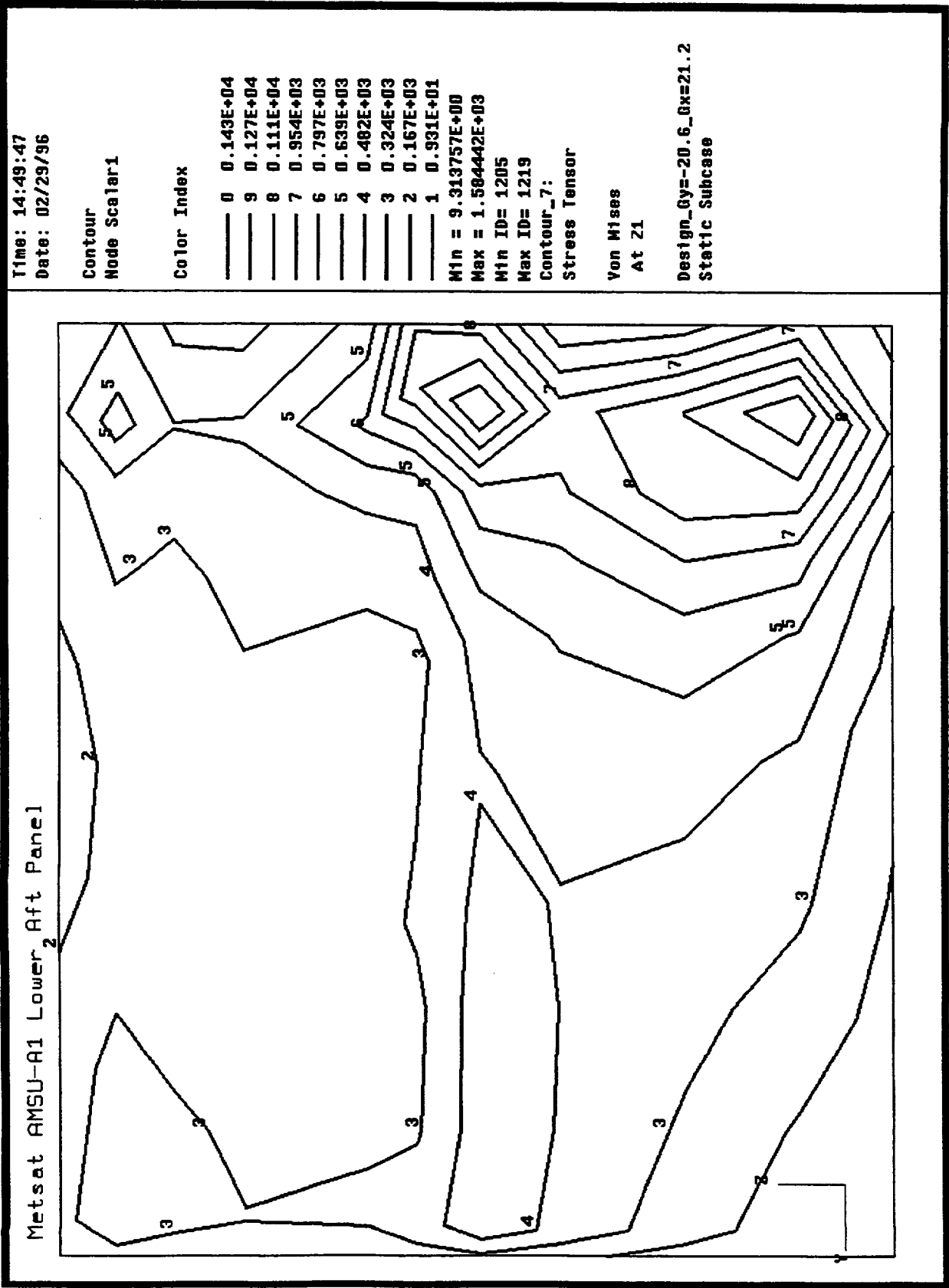


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

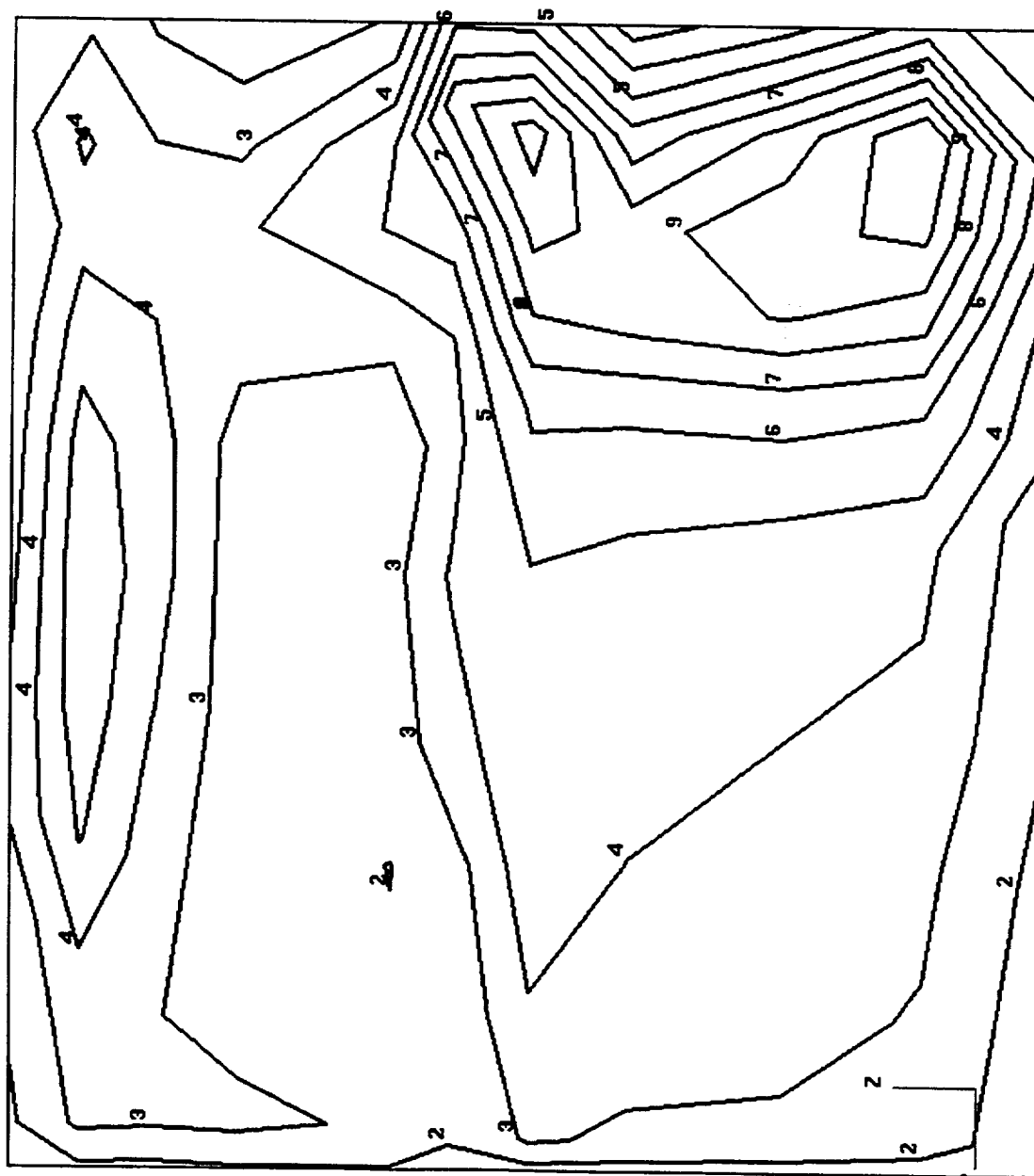
FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:29:40
Lower Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2



Metsat AMSU-A1 Lower Aft Panel



Time: 14:50:14
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.117E+04
—	9	0.104E+04
—	8	0.921E+03
—	7	0.799E+03
—	6	0.676E+03
—	5	0.554E+03
—	4	0.432E+03
—	3	0.310E+03
—	2	0.188E+03
—	1	0.653E+02

Min = 6.531436E+01

Max = 1.207418E+03

Min ID= 1205

Max ID= 1216

Contour_0:

Stress Tensor

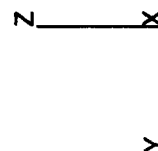
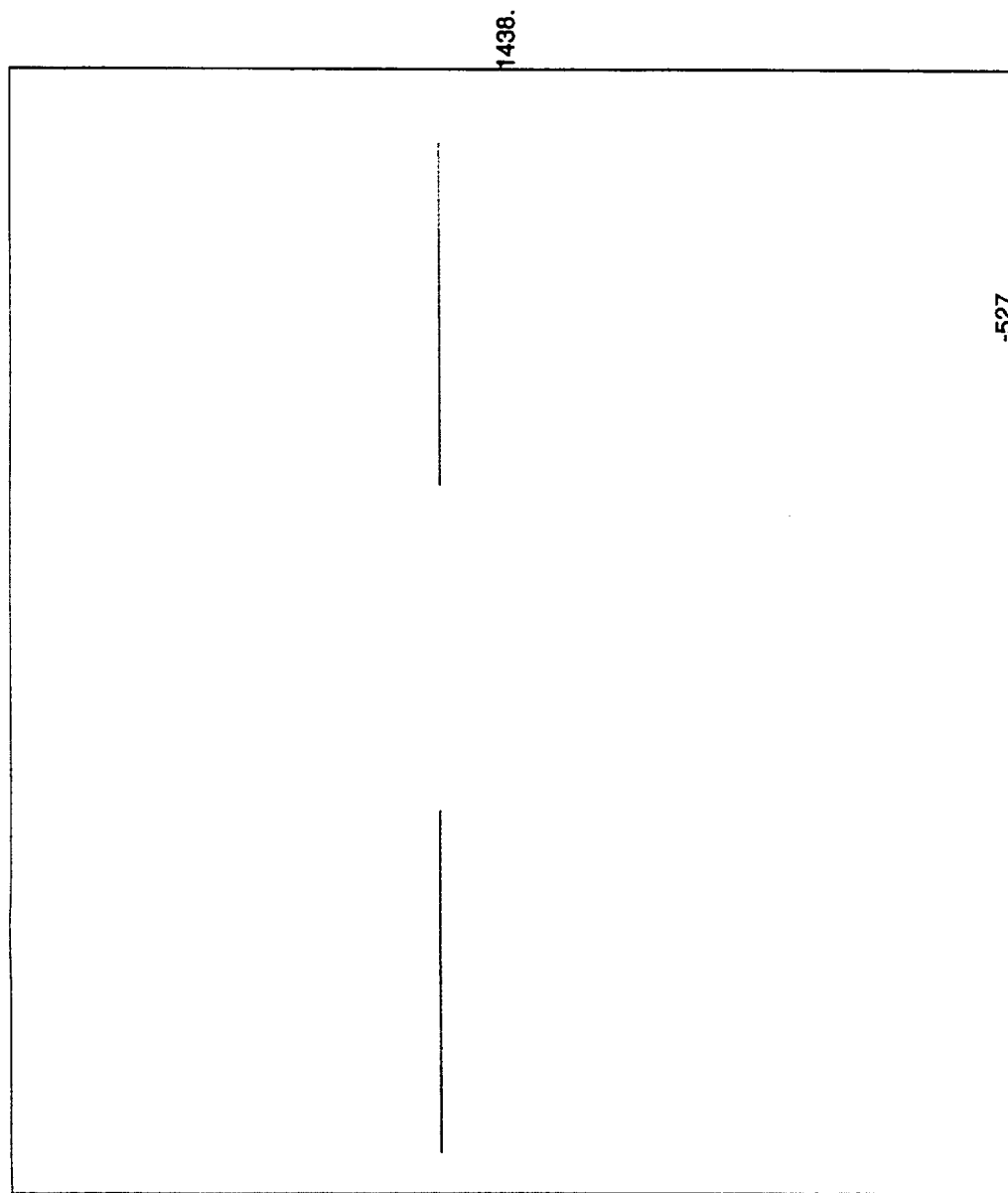
Von Mises

At 22

Design_Oy=-20.6_Ox=21.2
Static Subcase

FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:20:32

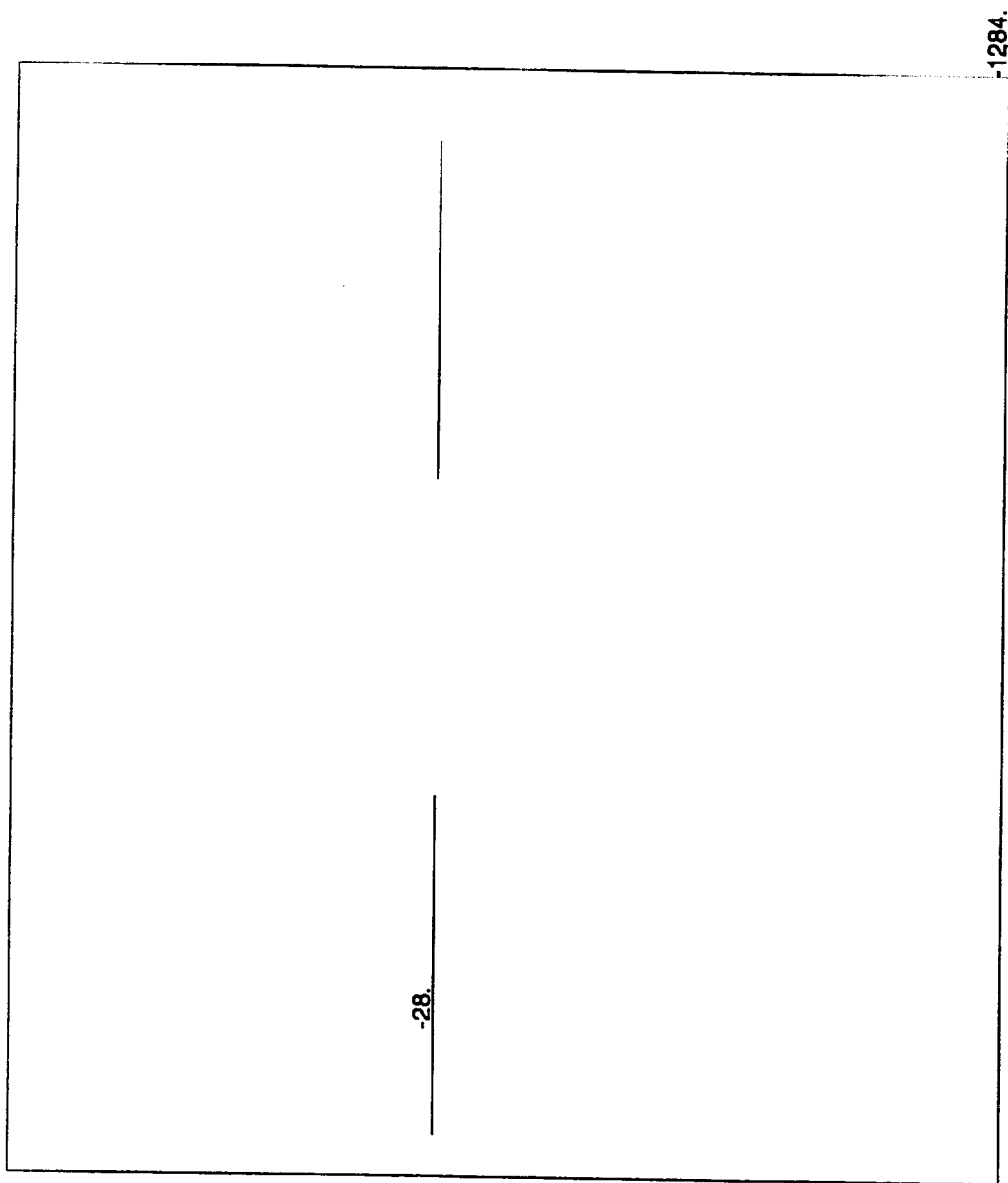
Lower Aft Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

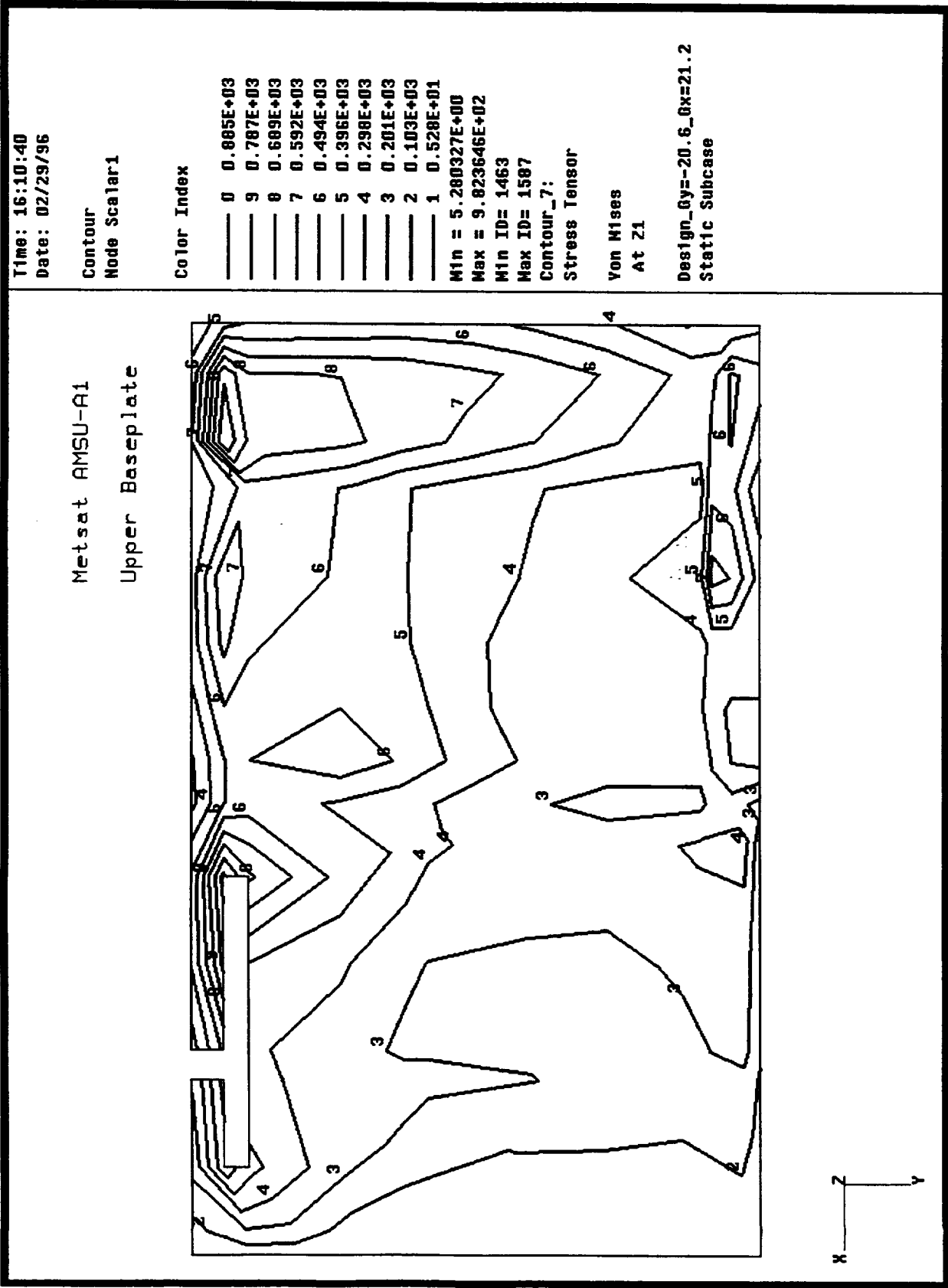
1438.
1307.
1176.
1045.
914.
783.
652.
521.
390.
259.
128.
-3.
-134.
-265.
-396.
-527.

FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:20:44
Lower Aft Panel Beams



-28.
-112.
-195.
-279.
-363.
-447.
-530.
-614.
-698.
-782.
-866.
-949.
-1033.
-1117.
-1201.
-1284.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2



Time: 16:12:33
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.880E+03
1	0.785E+03
2	0.689E+03
3	0.594E+03
4	0.498E+03
5	0.403E+03
6	0.307E+03
7	0.212E+03
8	0.116E+03
9	0.207E+02

Min = 2.074066E+01
Max = 9.757130E+02

Min ID= 1463

Max ID= 1587

Contour_8:

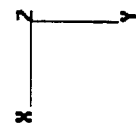
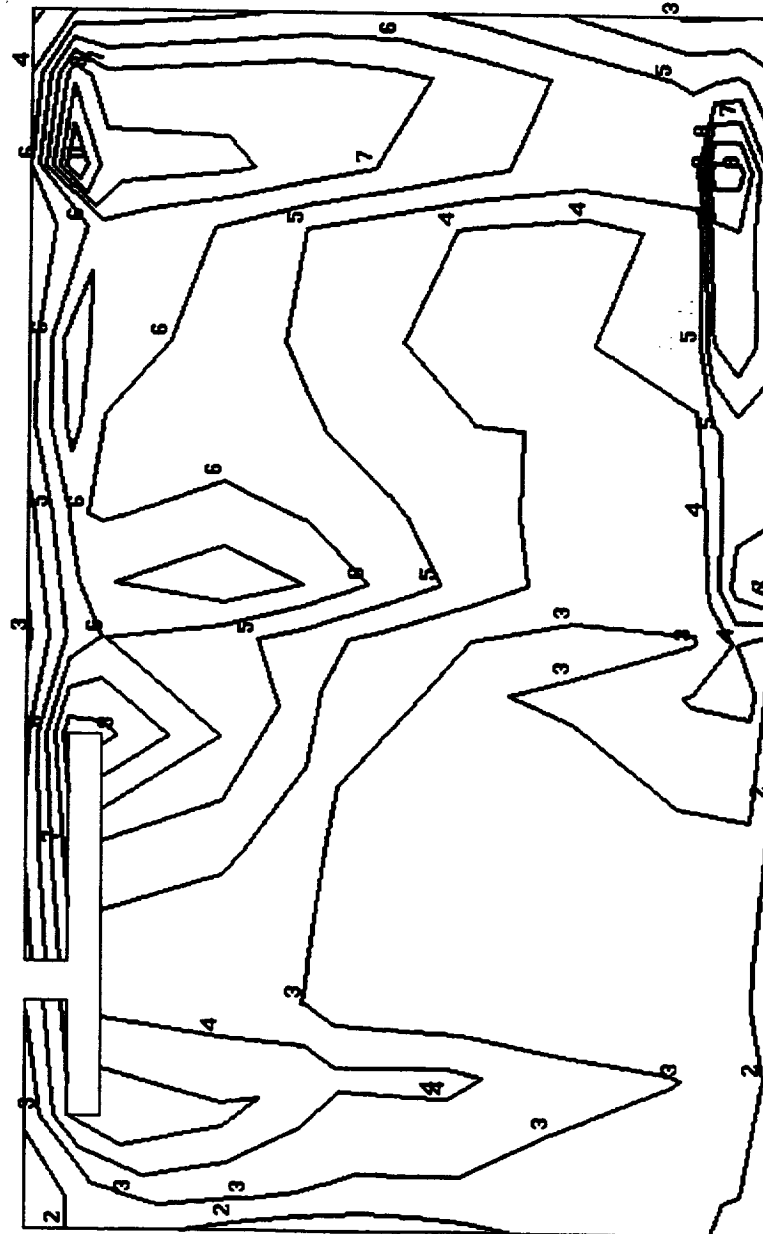
Stress Tensor

Von Mises

At 22

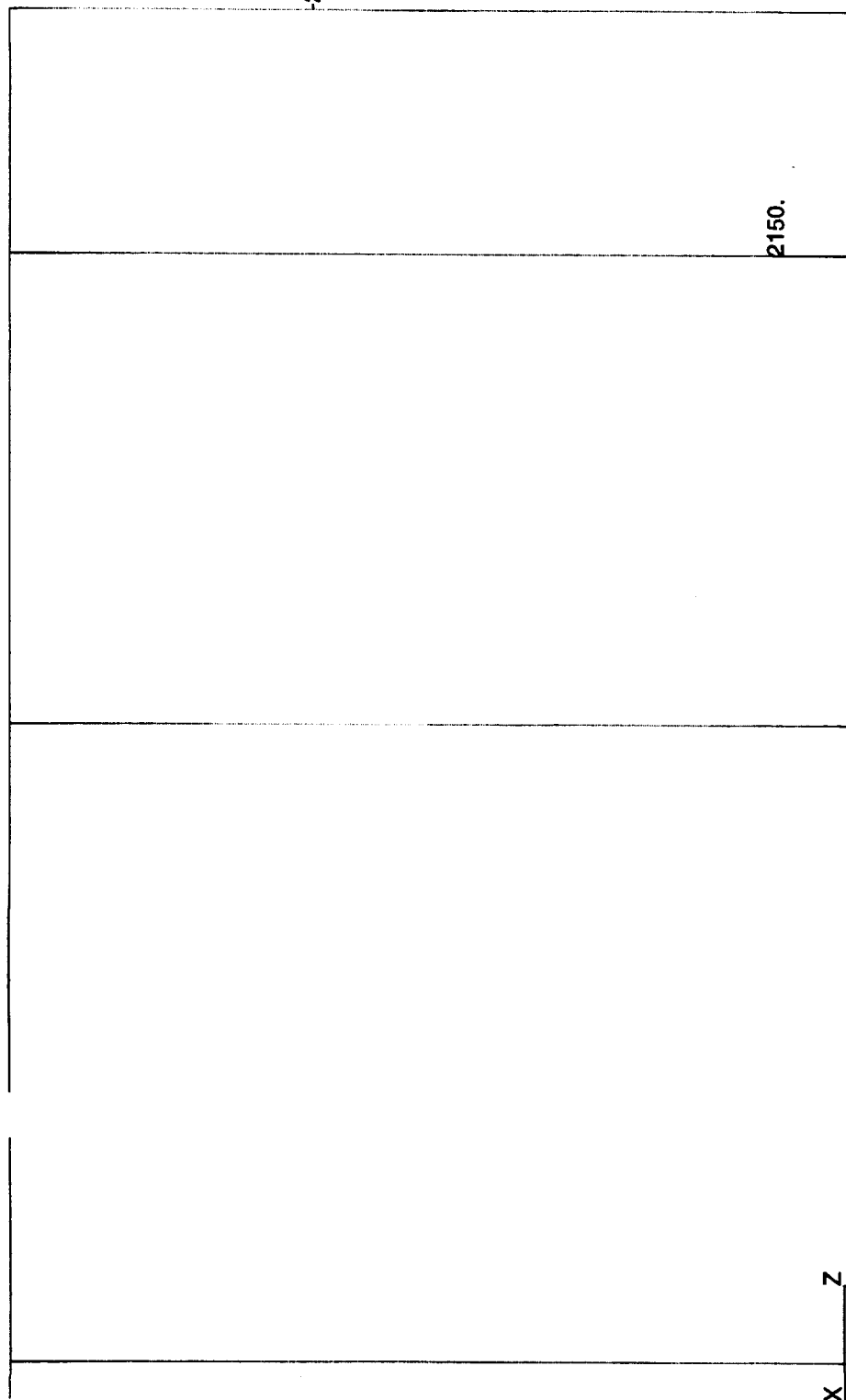
Design_Qy=-20.6_Qx=21.2
Static Subcase

Metsat AMSU-A1
Upper Baseplate

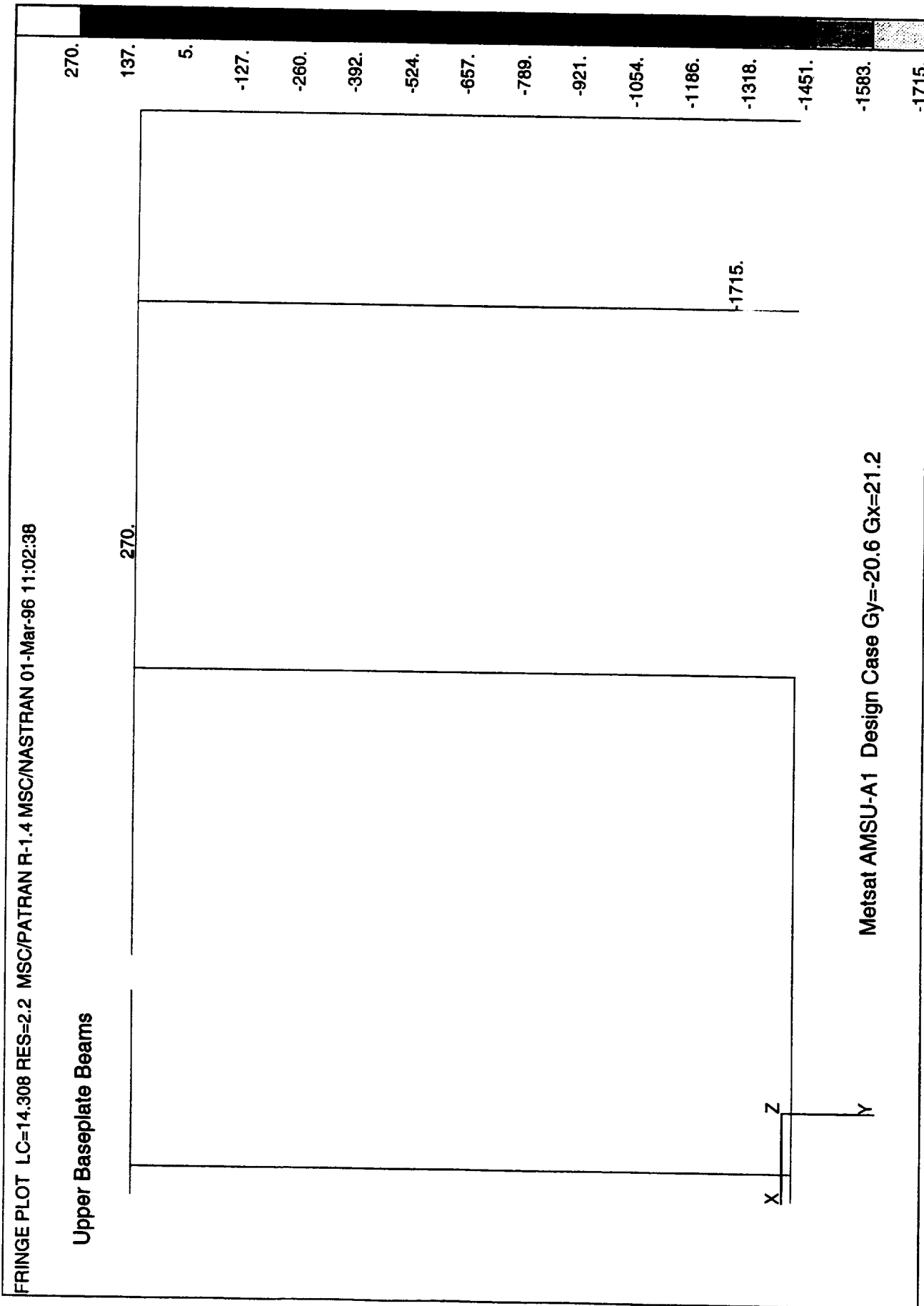


FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:02:27

Upper Baseplate Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2



Time: 15:35:59
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.812E+03
9	0.725E+03
8	0.639E+03
7	0.552E+03
6	0.465E+03
5	0.378E+03
4	0.292E+03
3	0.205E+03
2	0.118E+03
1	0.317E+02

Min = 3.170192E+01

Max = 8.985949E+02

Min ID= 1993

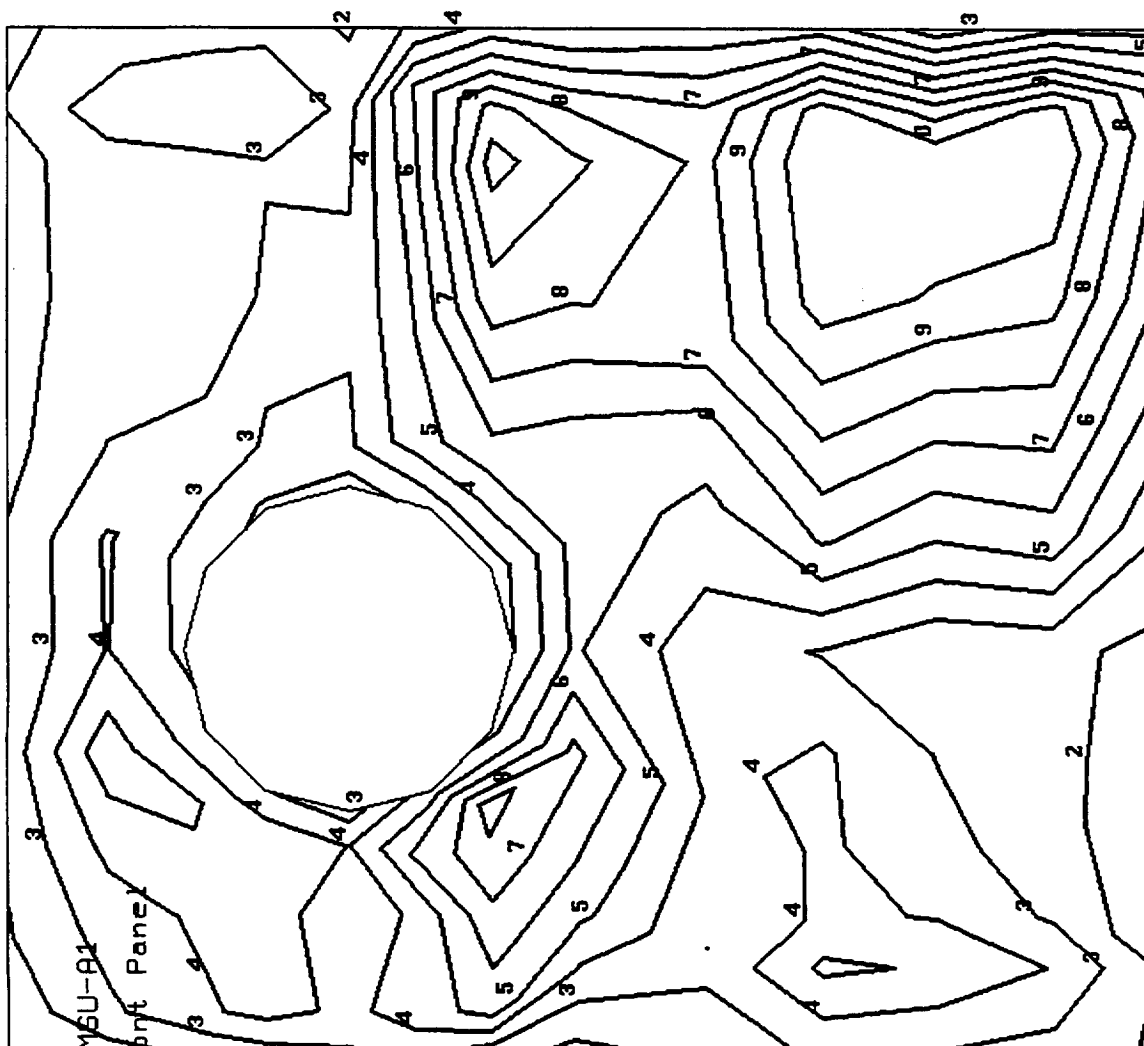
Max ID= 2091

Contour_7:

Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_gx=21.2
Static Subcase



Time: 15:36:24
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.143E+04
1	0.128E+04
2	0.112E+04
3	0.964E+03
4	0.800E+03
5	0.651E+03
6	0.495E+03
7	0.339E+03
8	0.182E+03
9	0.260E+02

Min = 2.600011E+01

Max = 1.589578E+03

Min ID= 1993

Max ID= 2102

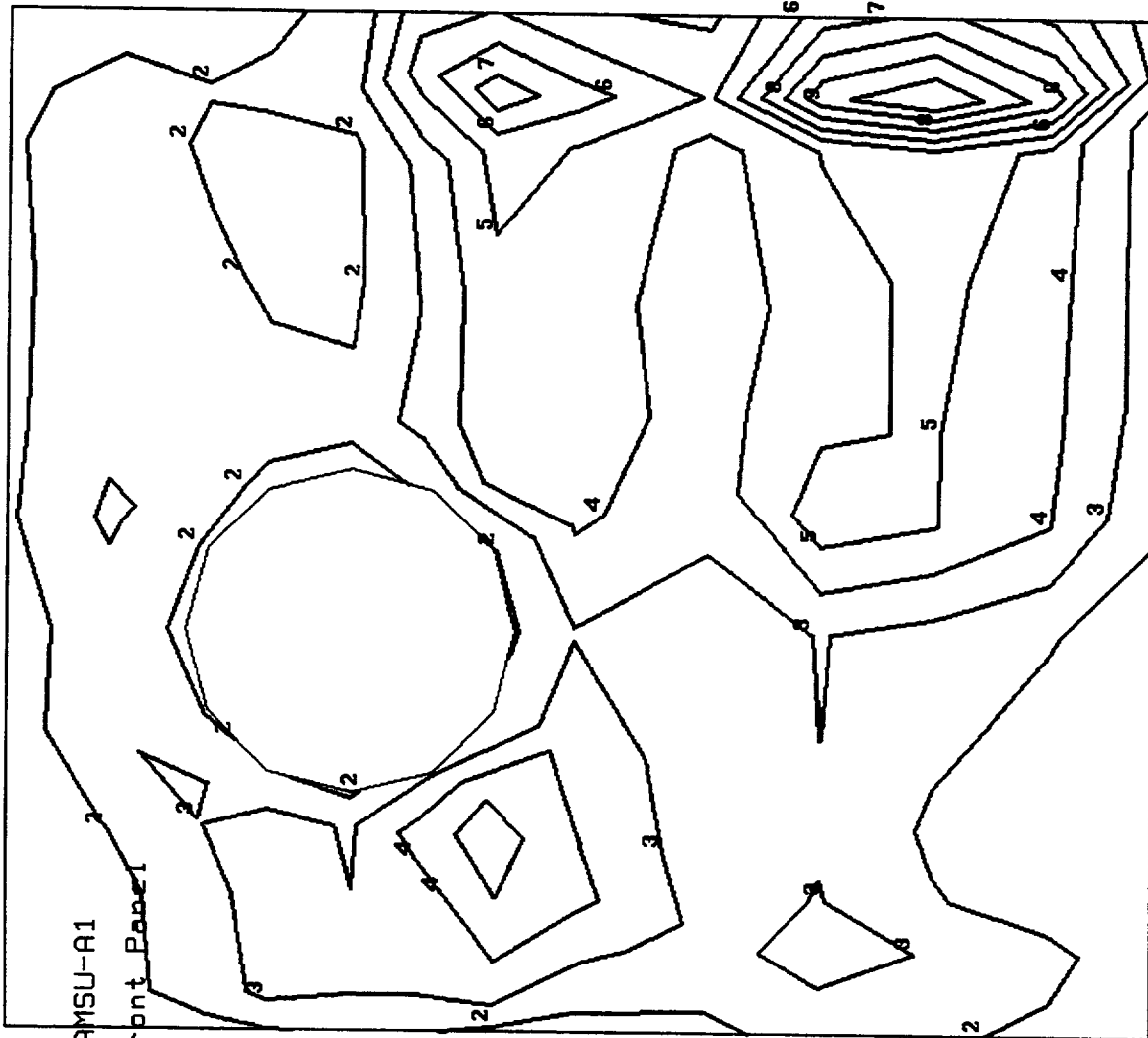
Contour_8:

Stress Tensor

Von Mises

At 22

Design_Oy=-20.6_Ox=21.2
Static Subcase

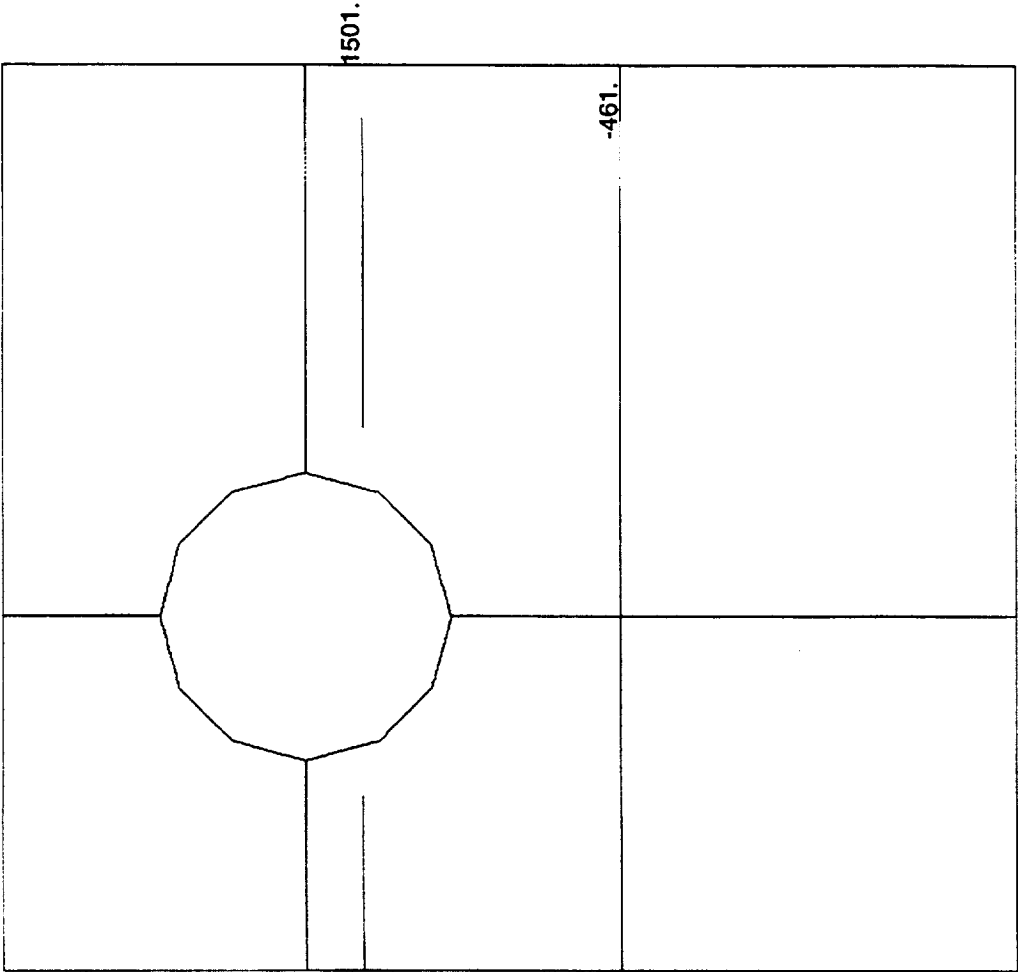


Metsat AMSU-A1
Upper Front Panel

Y
Z

FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:54:26

Upper Front Panel Beams

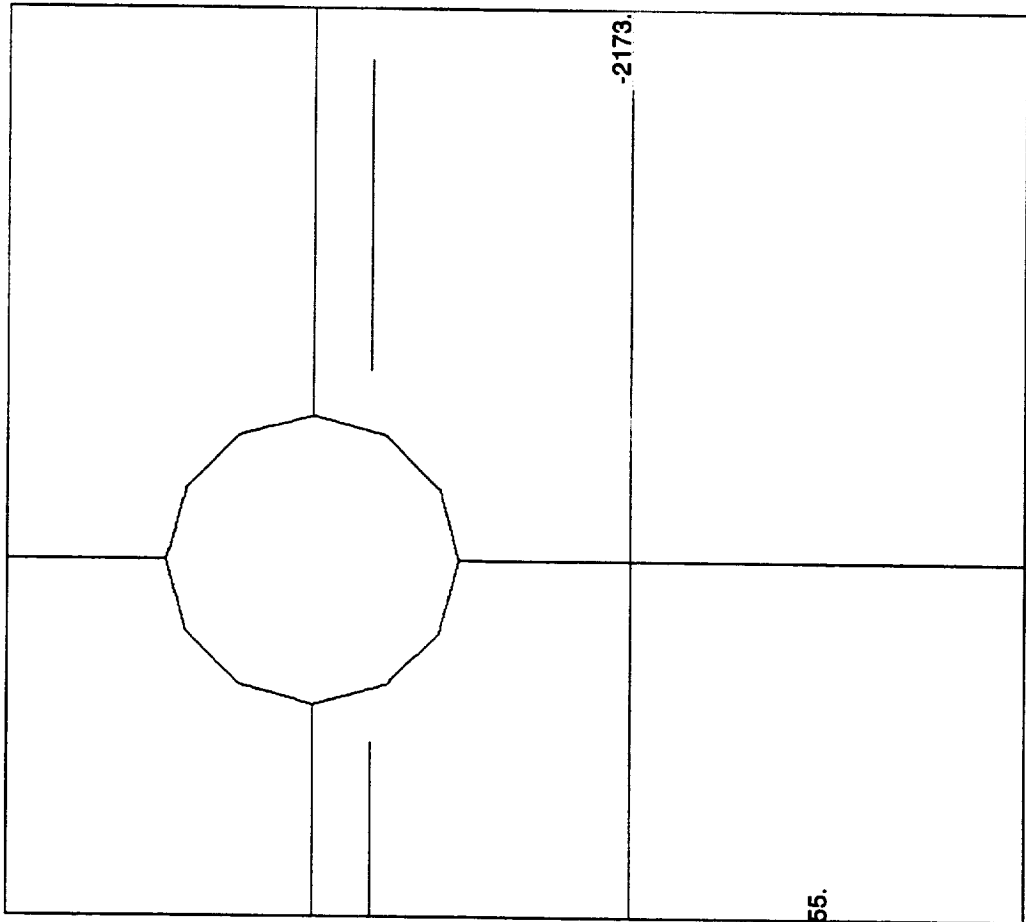


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

1501.
1370.
1239.
1109.
978.
847.
716.
586.
455.
324.
193.
62.
-68.
-199.
-330.
-461.

FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:54:32

Upper Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 15:29:24
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.416E+04
9	0.370E+04
8	0.325E+04
7	0.279E+04
6	0.234E+04
5	0.188E+04
4	0.143E+04
3	0.976E+03
2	0.522E+03
1	0.673E+02

Min = 6.729586E+01

Max = 4.611564E+03

Min ID= 6878

Max ID= 5599

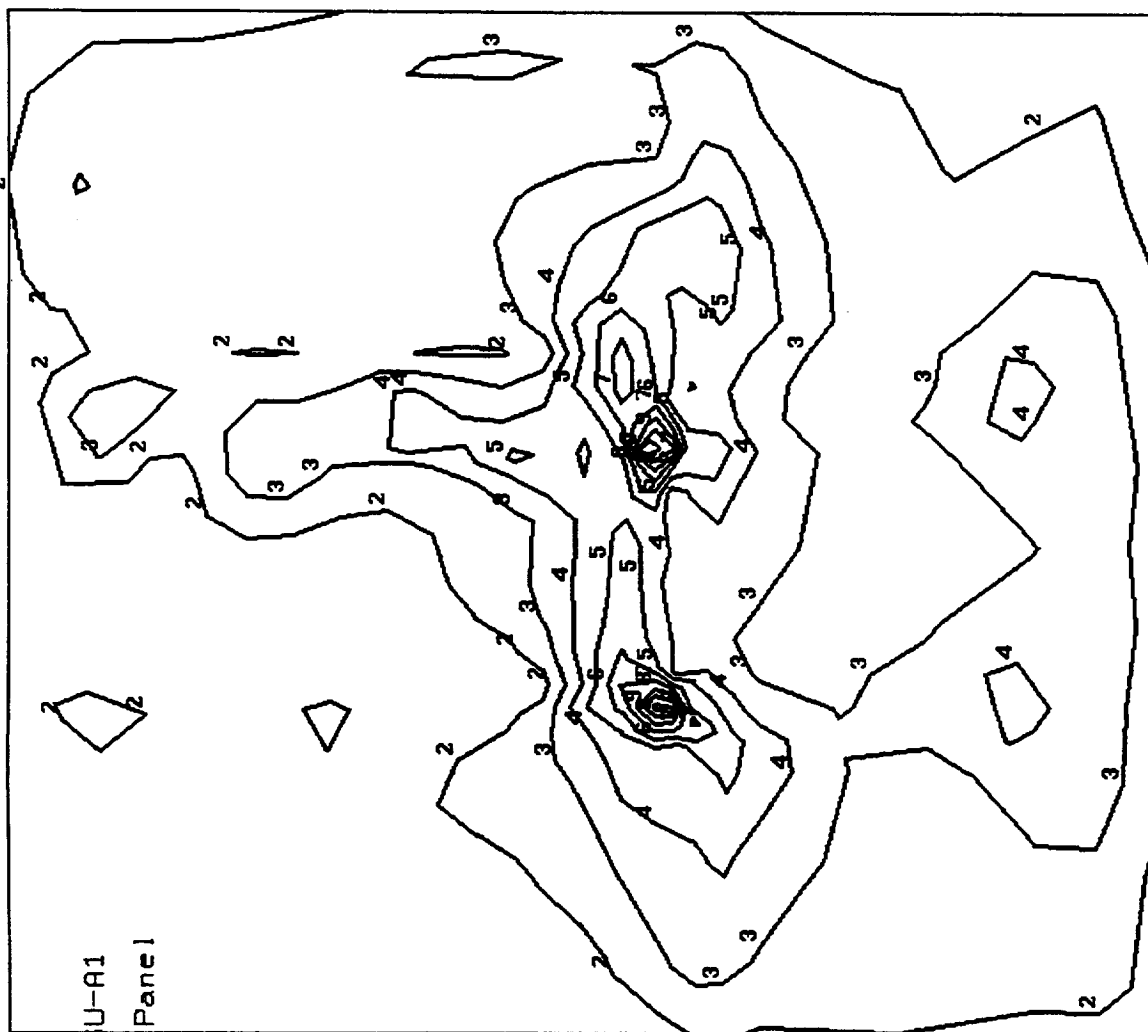
Contour_7:

Stress Tensor

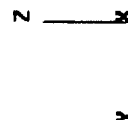
Von Mises

At Z1

Design_Gy=-20.6_Gx=21.2
Static Subcase



Metsat AMSU-A1
Upper Aft Panel



Time: 15:28:56
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.391E+04
9	0.348E+04
8	0.306E+04
7	0.264E+04
6	0.222E+04
5	0.180E+04
4	0.138E+04
3	0.958E+03
2	0.537E+03
1	0.116E+03

Min = 1.156255E+02

Max = 4.326627E+03

Min ID= 2240

Max ID= 5599

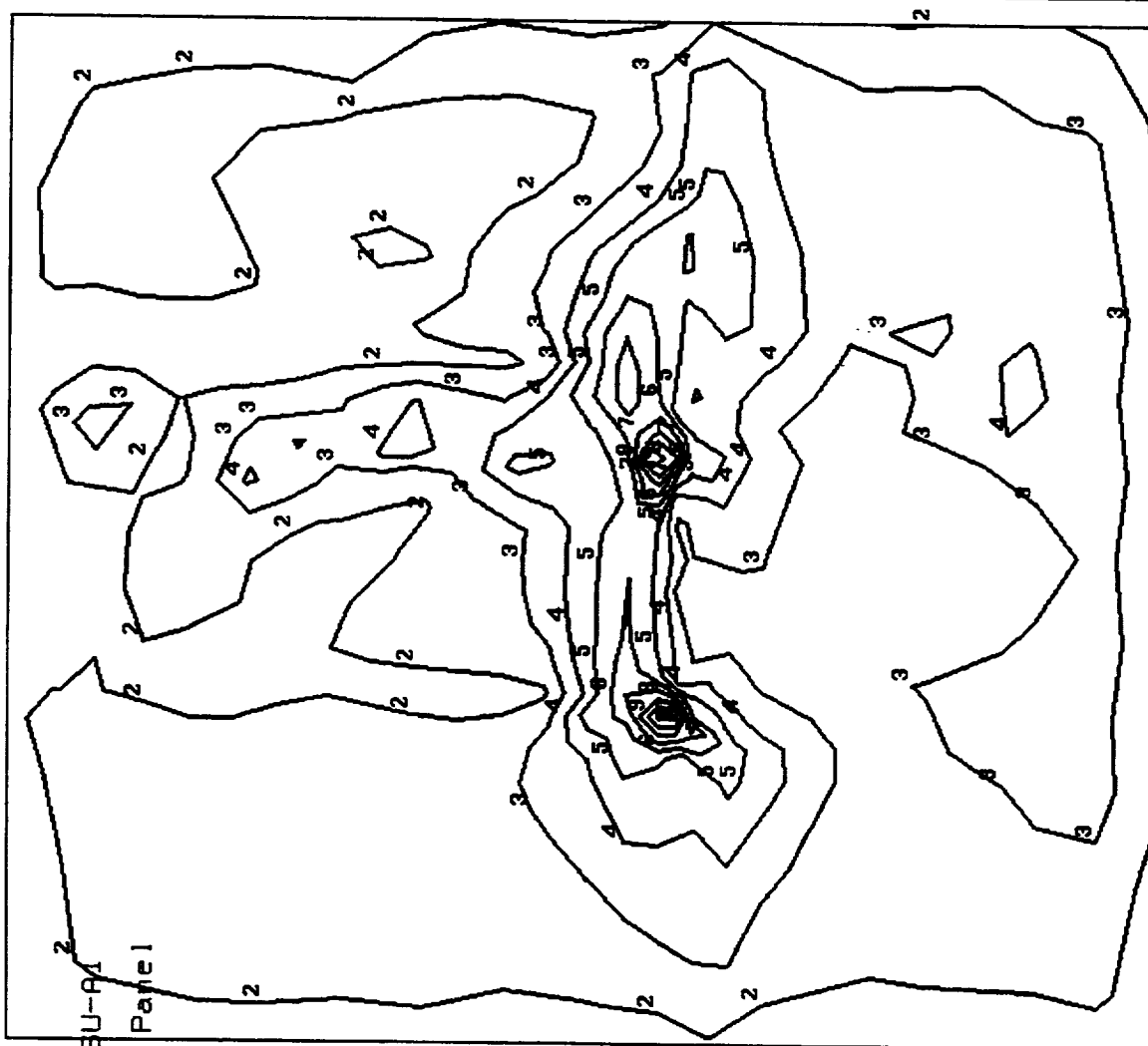
Contour_0:

Stress Tensor

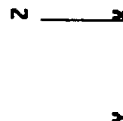
Von Mises

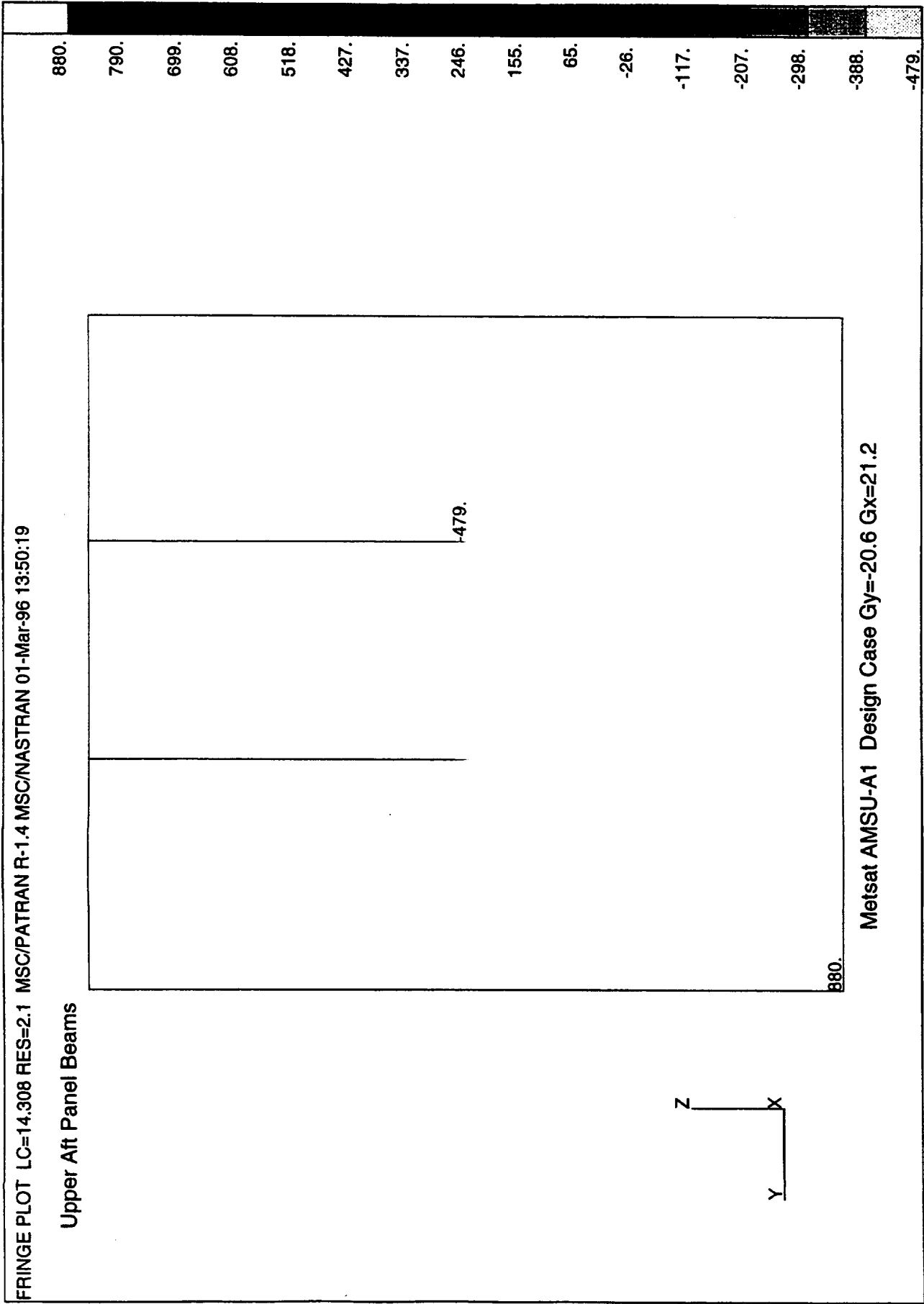
At 22

Design_Qy=-20.6_Gx=21.2
Static Subcase



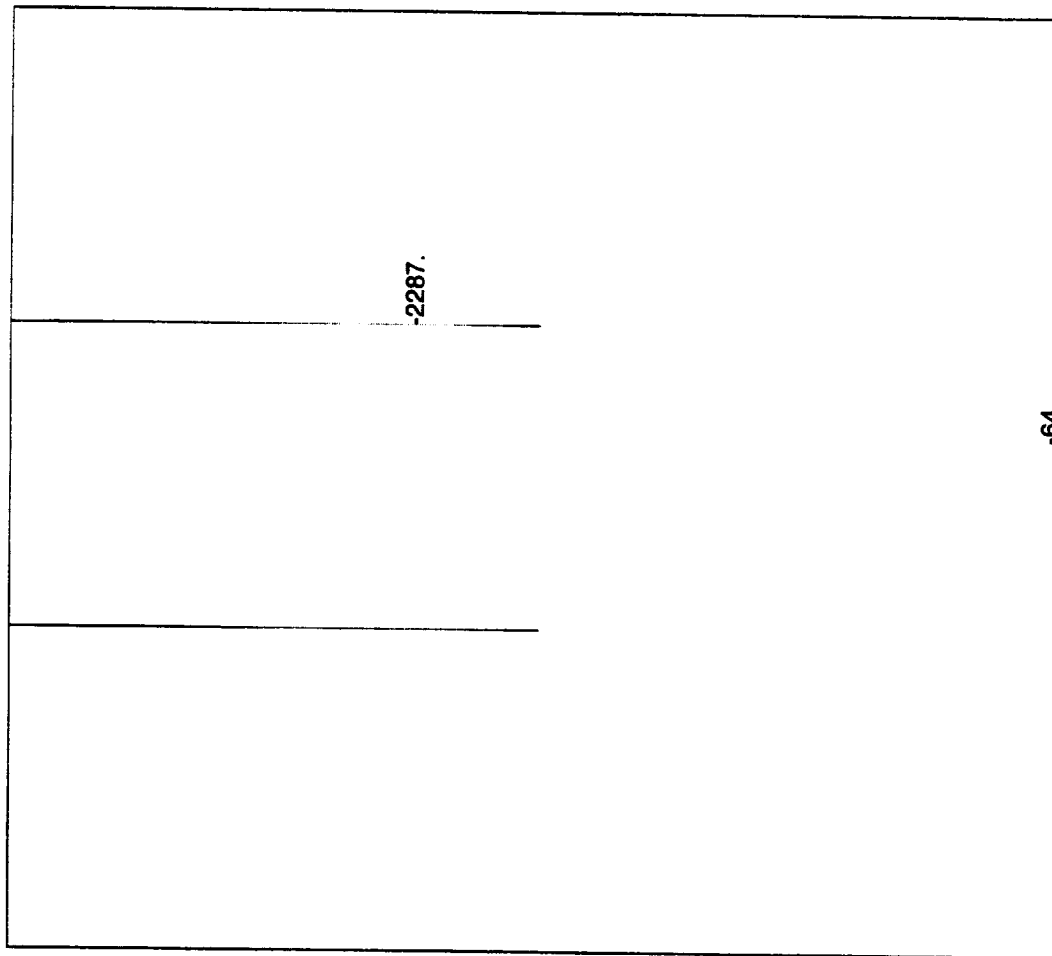
Metsat AMSU-A1
Upper Aft Panel



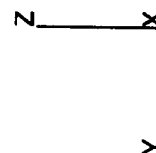


FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:50:25

Upper Aft Panel Beams

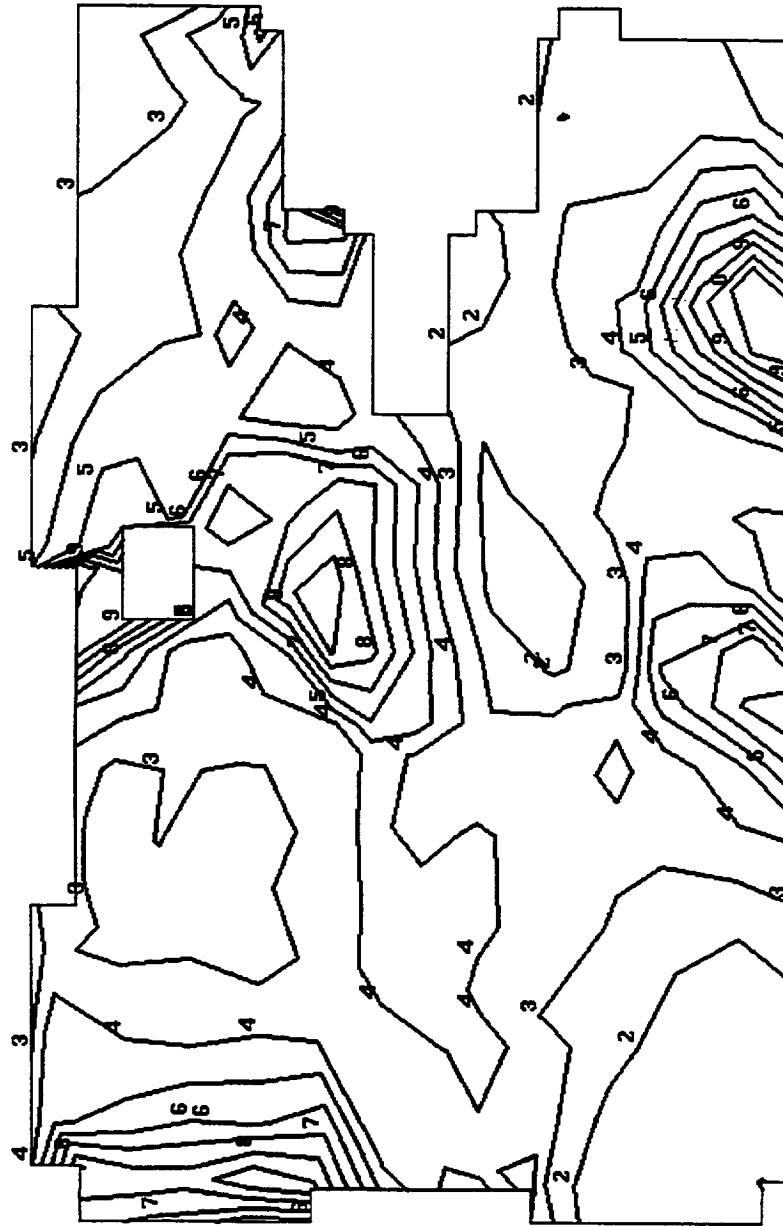


Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2



Time: 16:16:03
Date: 02/29/96

Metsat AMSU-A1
Lower Shelf



Contour
Node Scalar1

Color Index

0	0.118E+04
1	0.106E+04
2	0.931E+03
3	0.807E+03
4	0.683E+03
5	0.558E+03
6	0.434E+03
7	0.310E+03
8	0.186E+03
9	0.614E+02

M1n = 6.138128E+01

Max = 1.304043E+03

M1n ID= 1440

Max ID= 1639

Contour_7:

Stress Tensor

Von Mises
At 21

Design_Gy=-20.6_0x=21.2
Static Subcase

Time: 16:15:37
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.131E+04
1	0.117E+04
2	0.103E+04
3	0.895E+03
4	0.750E+03
5	0.621E+03
6	0.484E+03
7	0.347E+03
8	0.210E+03
9	0.734E+02

Min = 7.343334E+01

Max = 1.442896E+03

Min ID= 1610

Max ID= 1039

Contour_8:

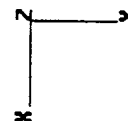
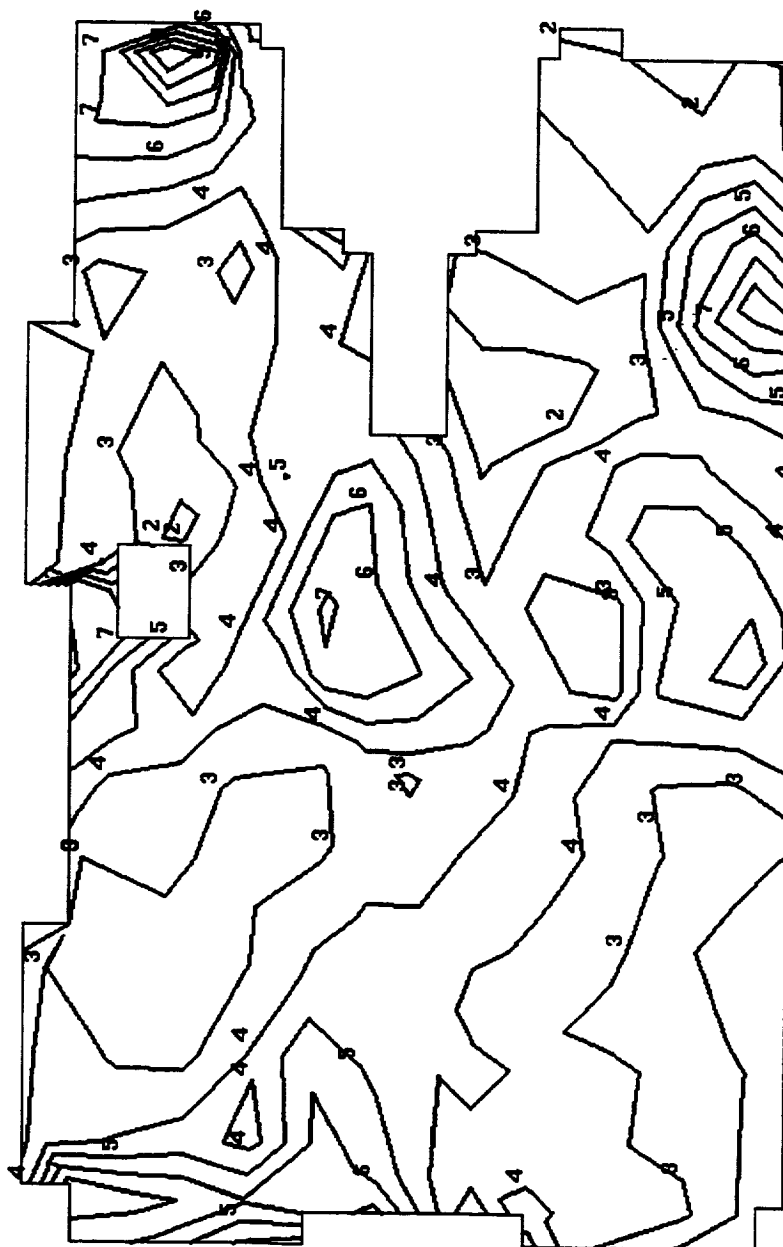
Stress Tensor

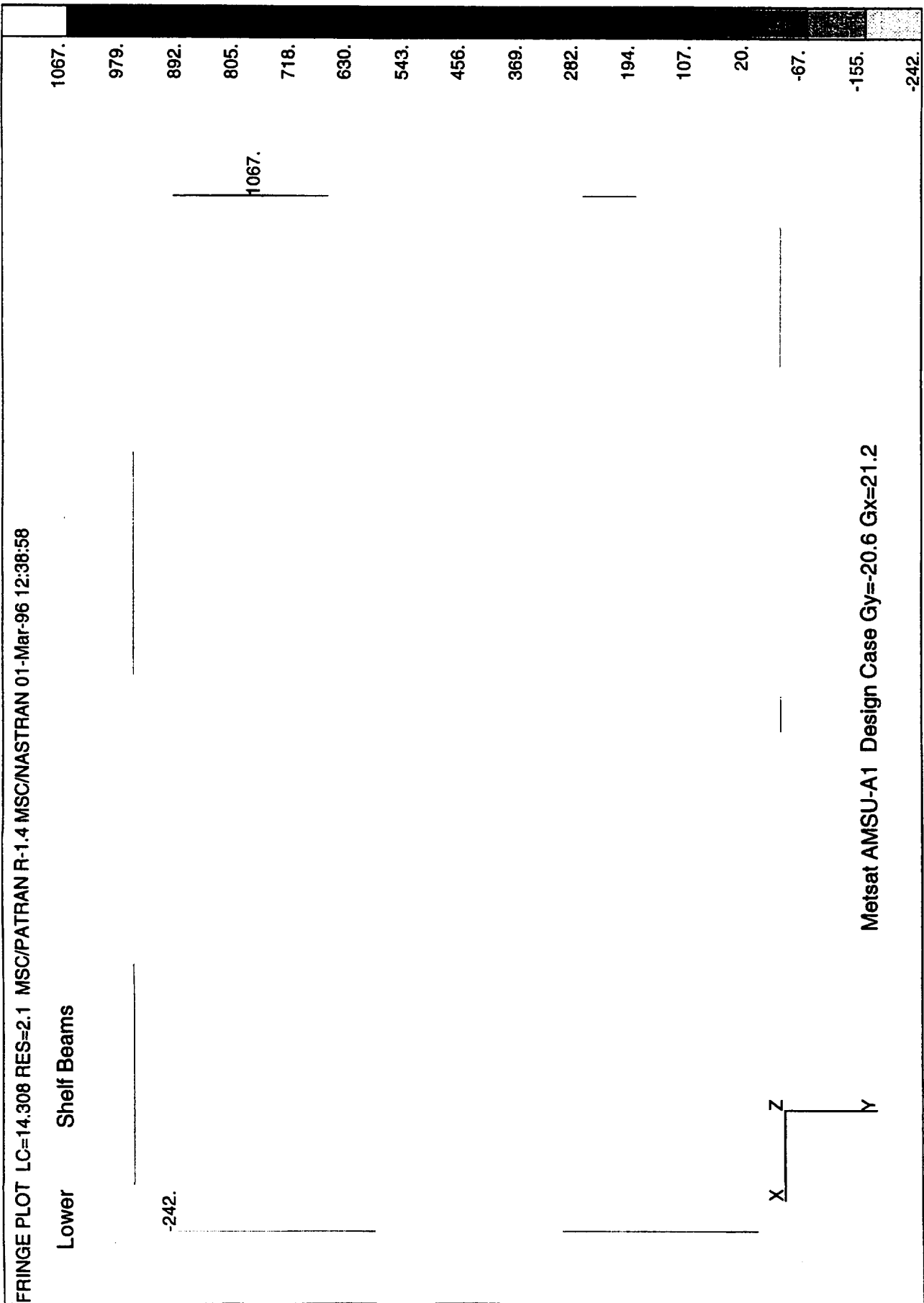
Von Mises

At Z2

Design_0y=-20.6_0x=21.2
Static Subcase

Metsat AMSU-A1
Lower Shelf





FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:39:05

Lower Shelf Beams

X Z Y

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

93.
51.
9.
-33.
-74.
-116.
-158.
-199.
-241.
-283.
-325.
-366.
-408.
-450.
-492.
-533.

-533.

93.

Time: 16:20:37
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.101E+04
1	0.897E+03
2	0.785E+03
3	0.673E+03
4	0.562E+03
5	0.450E+03
6	0.338E+03
7	0.227E+03
8	0.115E+03
9	0.327E+01

M1n = 3.274793E+00

Max = 1.120038E+03

M1n ID= 2338

Max ID= 2452

Contour_8:

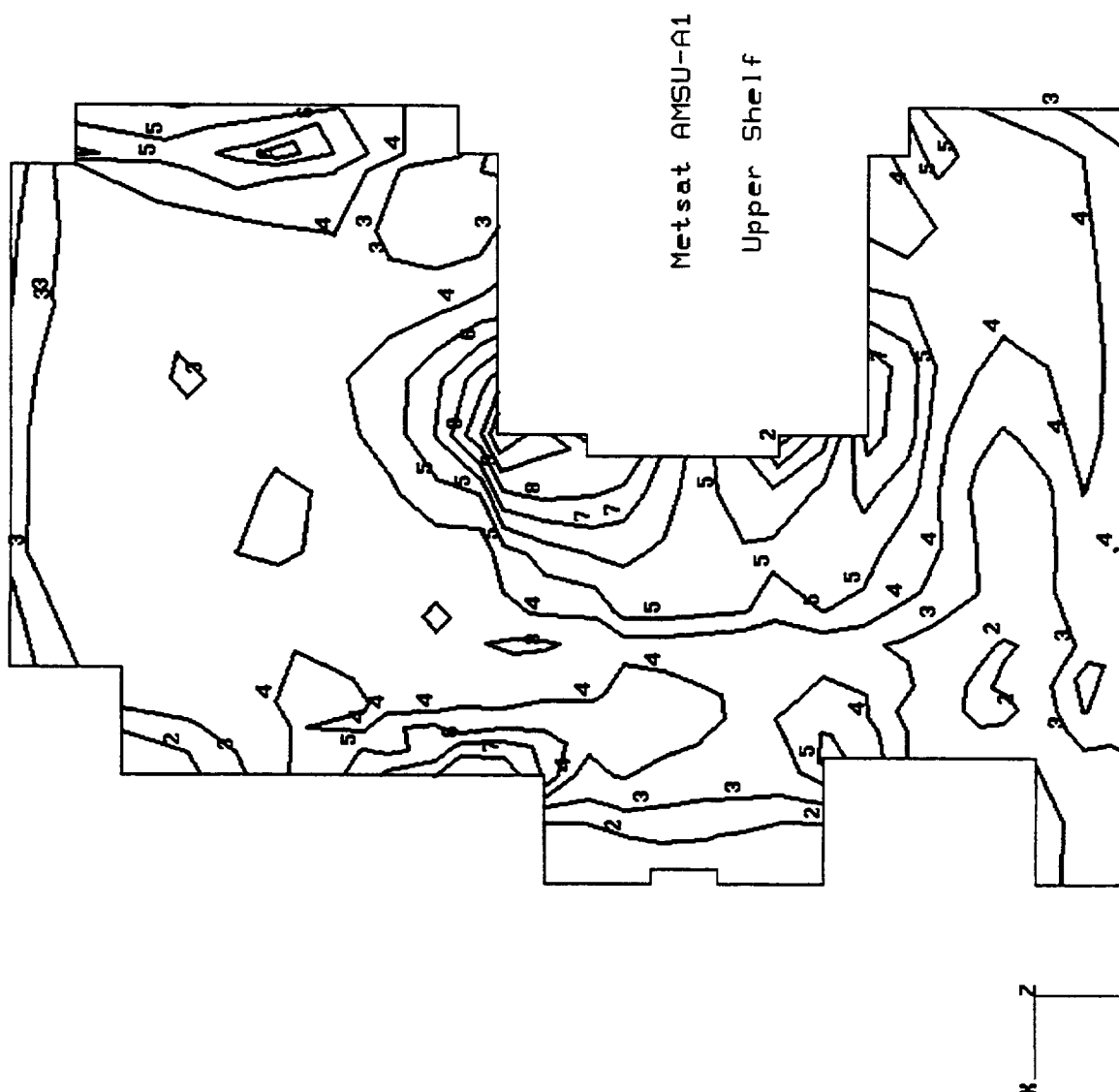
Stress Tensor

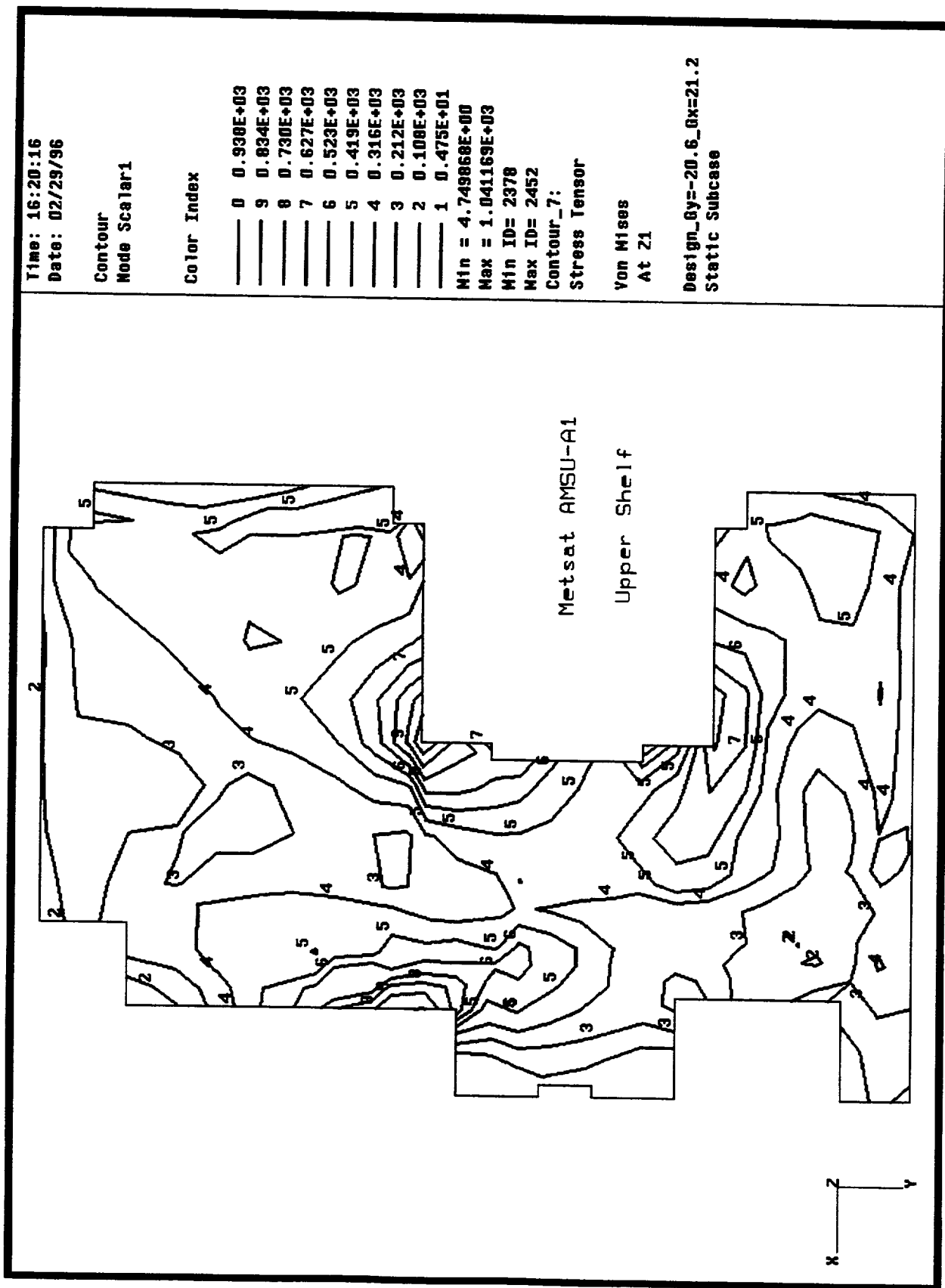
Von Mises

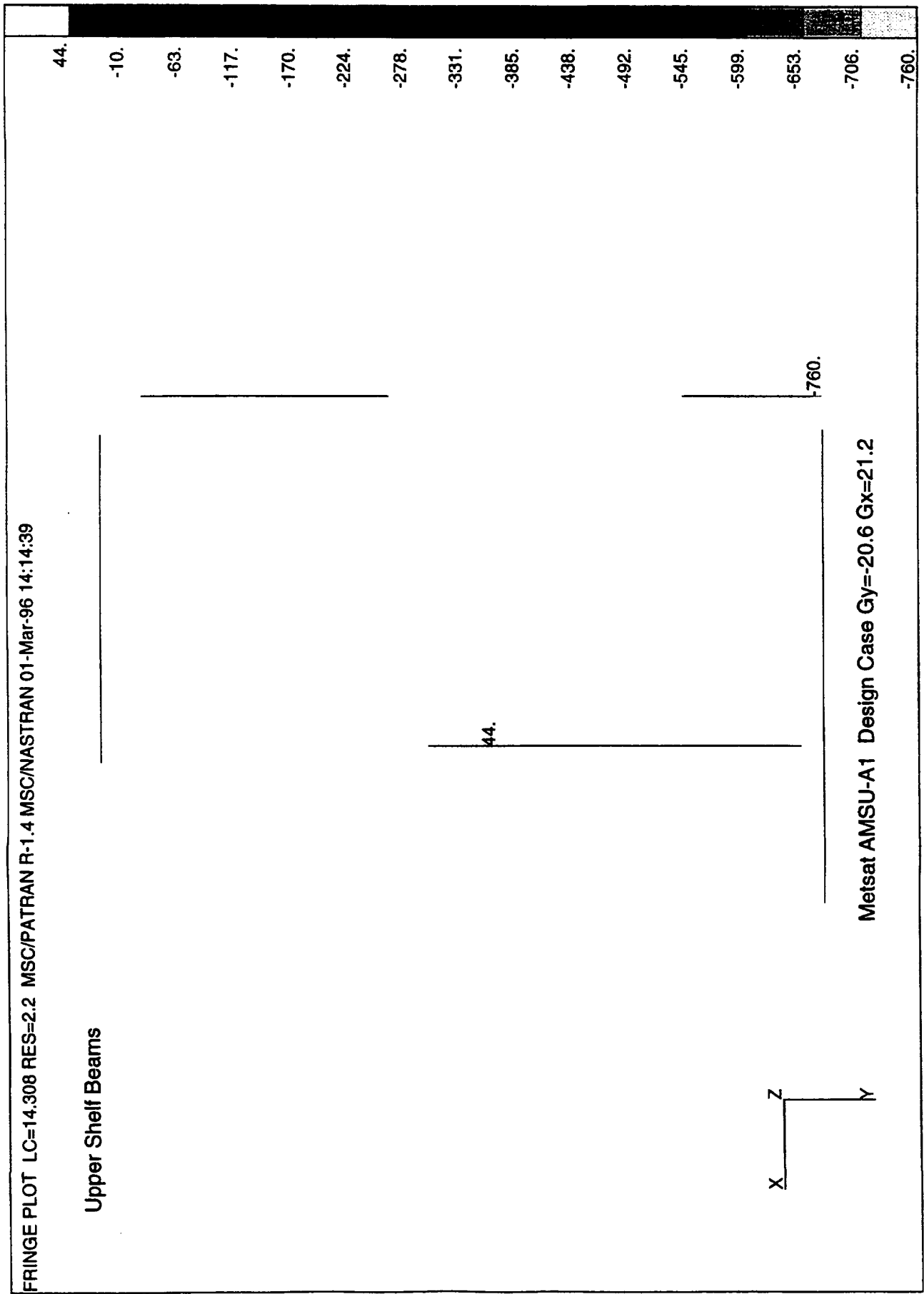
At Z2

Design_Oy=-20.6_Gx=21.2

Static Subcase







FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:14:34

Upper Shelf Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 14:08:25
Date: 02/29/96

Metsat AMSU-A1

Lower Right Front Support

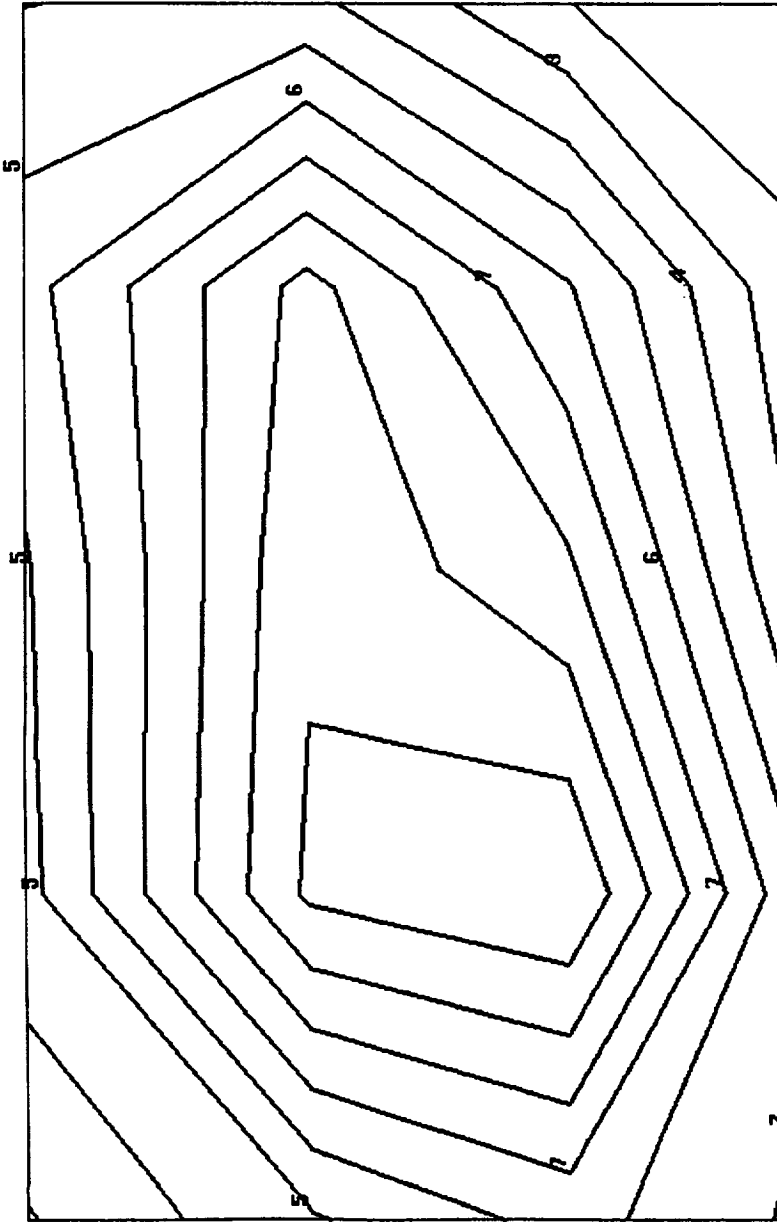
Contour
Node Scalar1

Color Index	
0	0.527E+03
9	0.476E+03
8	0.426E+03
7	0.376E+03
6	0.326E+03
5	0.276E+03
4	0.226E+03
3	0.176E+03
2	0.126E+03
1	0.758E+02

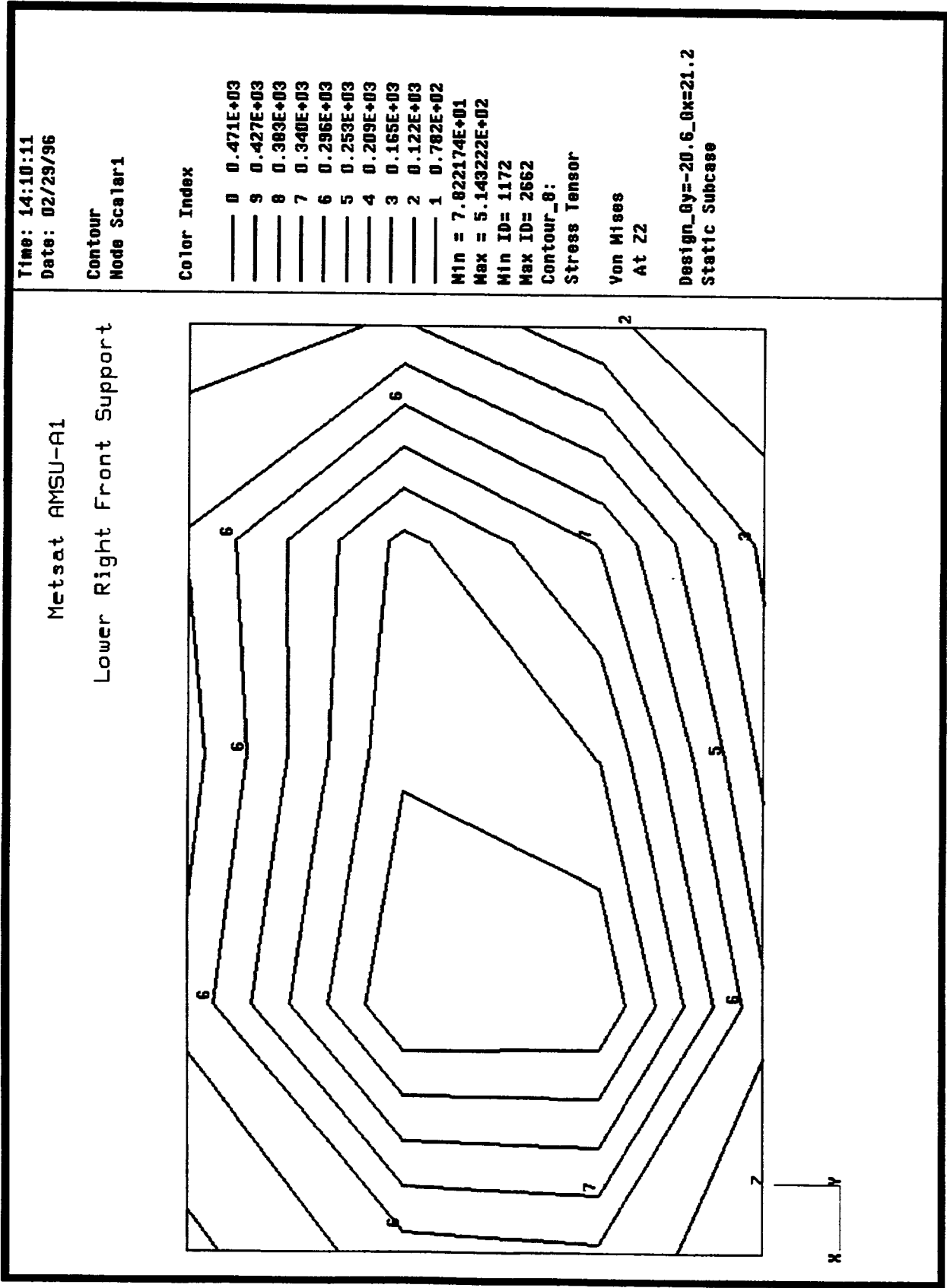
Min = 7.580952E+01
Max = 5.766450E+02
Min ID= 1172
Max ID= 2658
Contour_7:
Stress Tensor

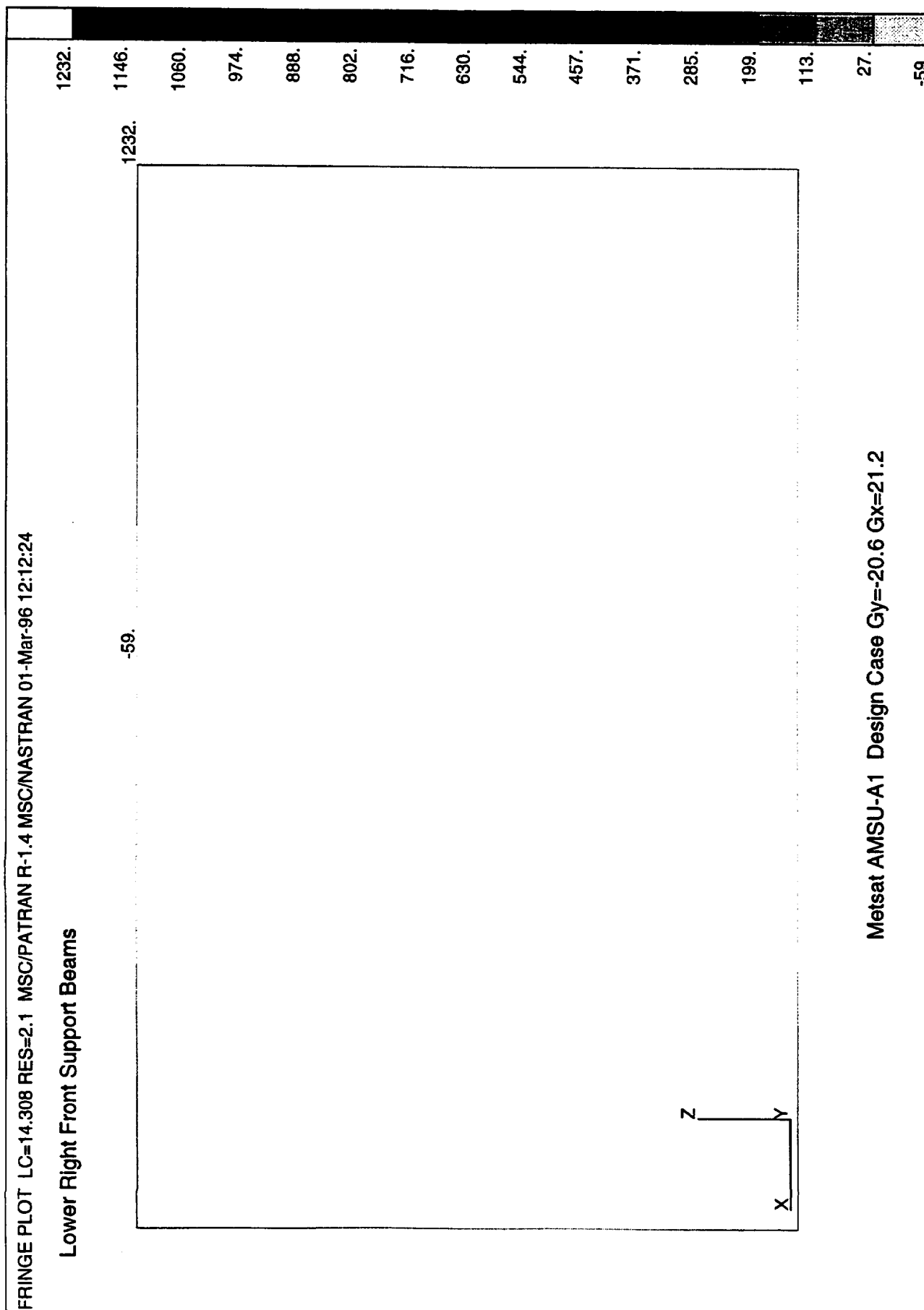
Von Mises
At 21

Design_Qy=-20.6_Ox=21.2
Static Subcase



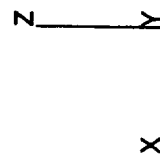
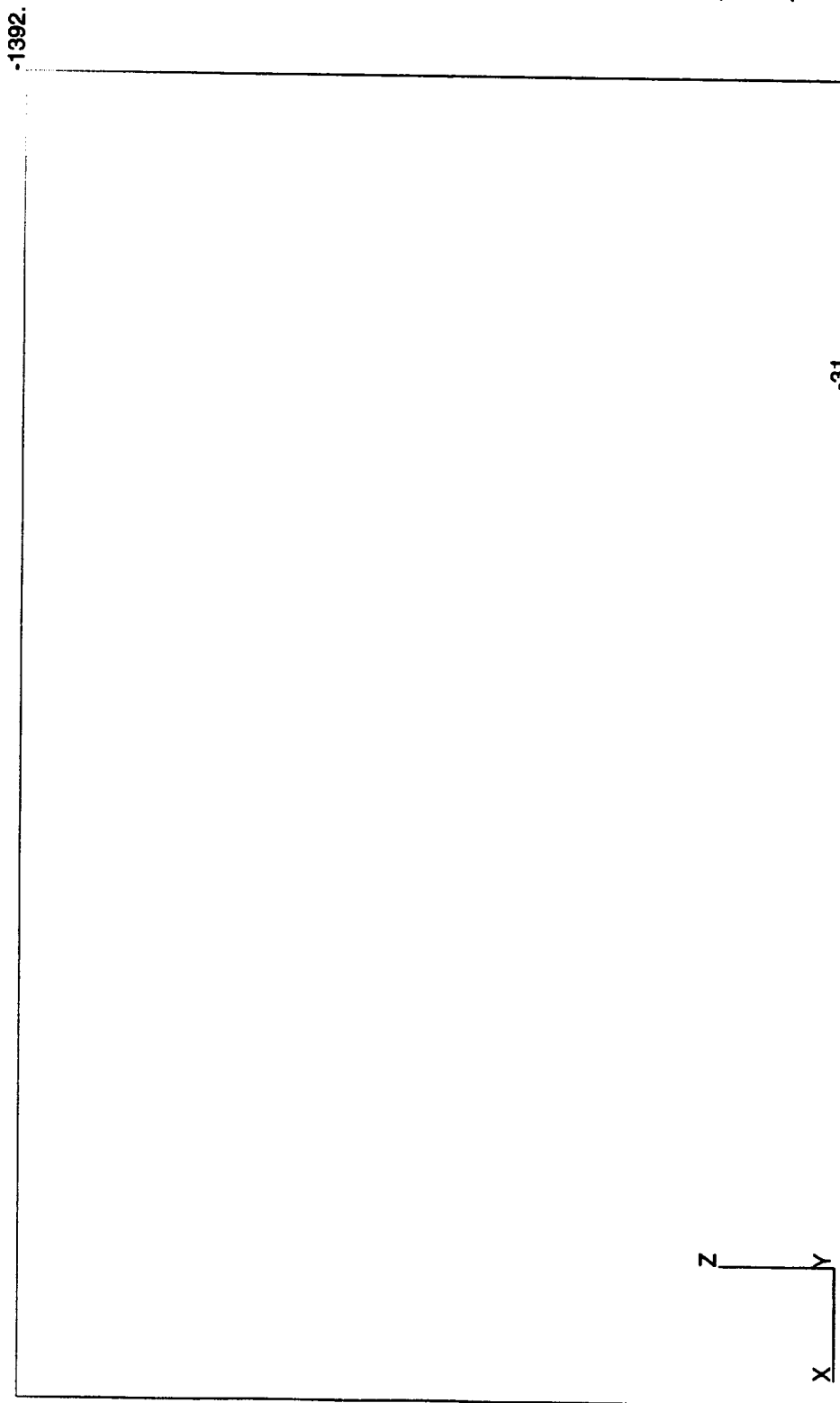
X
Y





FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:09:38

Lower Right Front Support Beams



-31.
-121.
-212.
-303.
-394.
-484.
-575.
-666.
-757.
-848.
-938.
-1029.
-1120.
-1211.
-1302.
-1392.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 14:01:34
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.119E+04
9	0.107E+04
8	0.957E+03
7	0.842E+03
6	0.726E+03
5	0.610E+03
4	0.495E+03
3	0.379E+03
2	0.264E+03
1	0.148E+03

Min = 1.480663E+02

Max = 1.303942E+03

Min ID= 1205

Max ID= 1421

Contour_7:

Stress Tensor

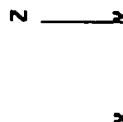
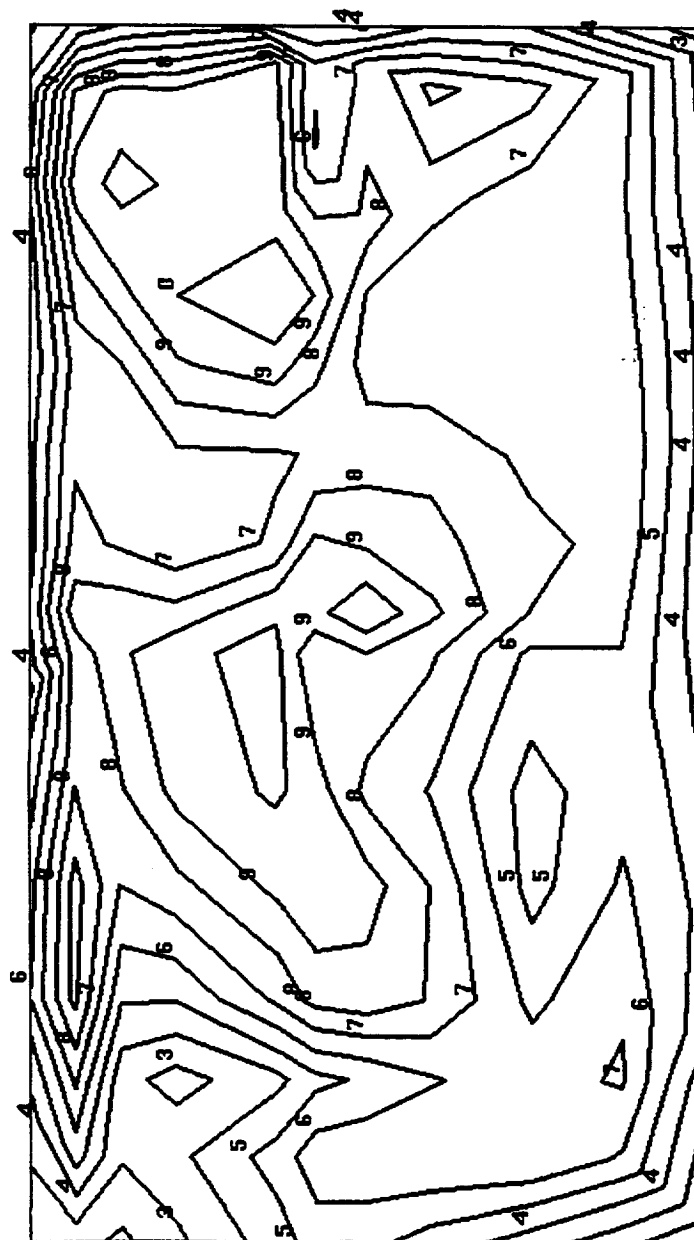
von Mises

At 21

Design_Gy=-20.6_Ox=21.2
Static Subcase

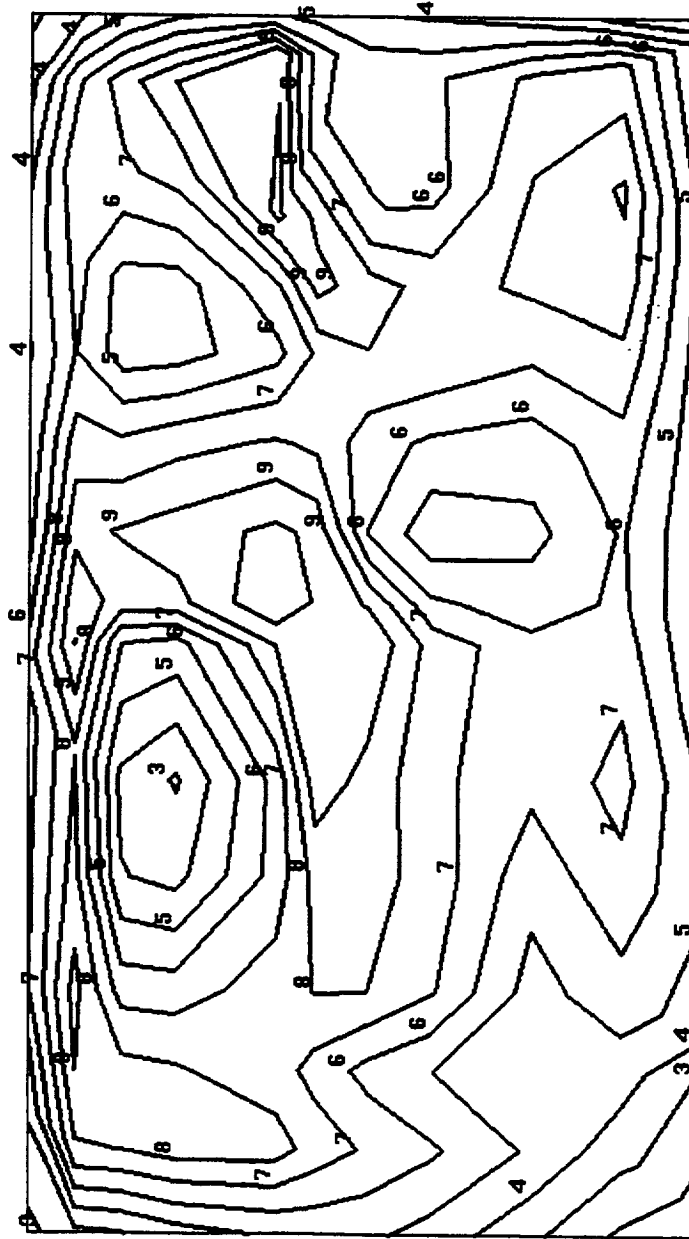
Metsat AMSU-A1

Lower Right Panel



Metsat AMSU-A1

Lower Right Panel



Time: 14:01:09
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.127E+04
—	9	0.113E+04
—	8	0.999E+03
—	7	0.864E+03
—	6	0.729E+03
—	5	0.595E+03
—	4	0.460E+03
—	3	0.326E+03
—	2	0.191E+03
—	1	0.566E+02

Min = 5.662939E+01

Max = 1.402165E+03

Min ID= 1205

Max ID= 1381

Contour_8:

Stress Tensor

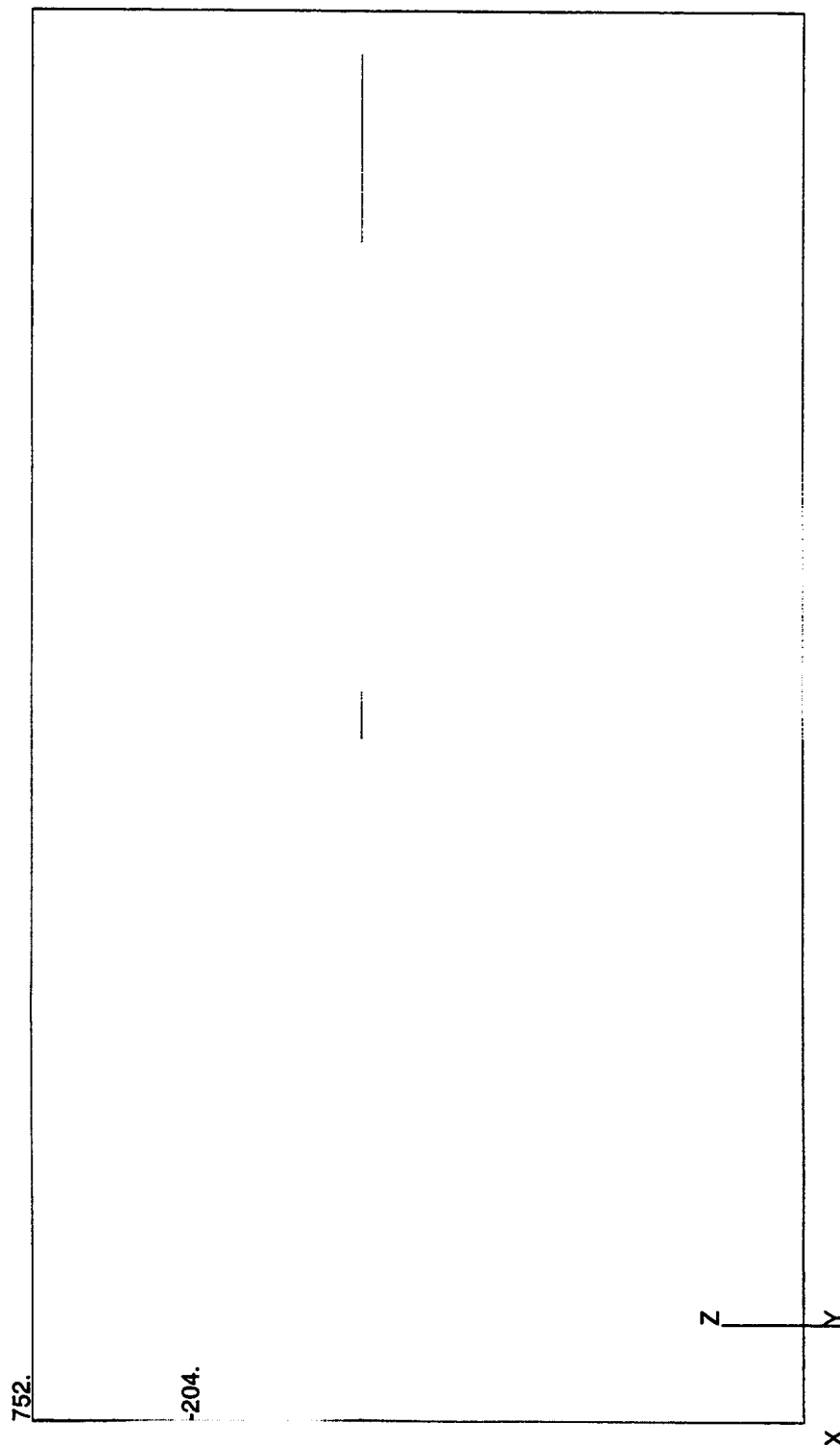
Von Mises

At 22

Design_0y=-20.6_0x=21.2
Static Subcase

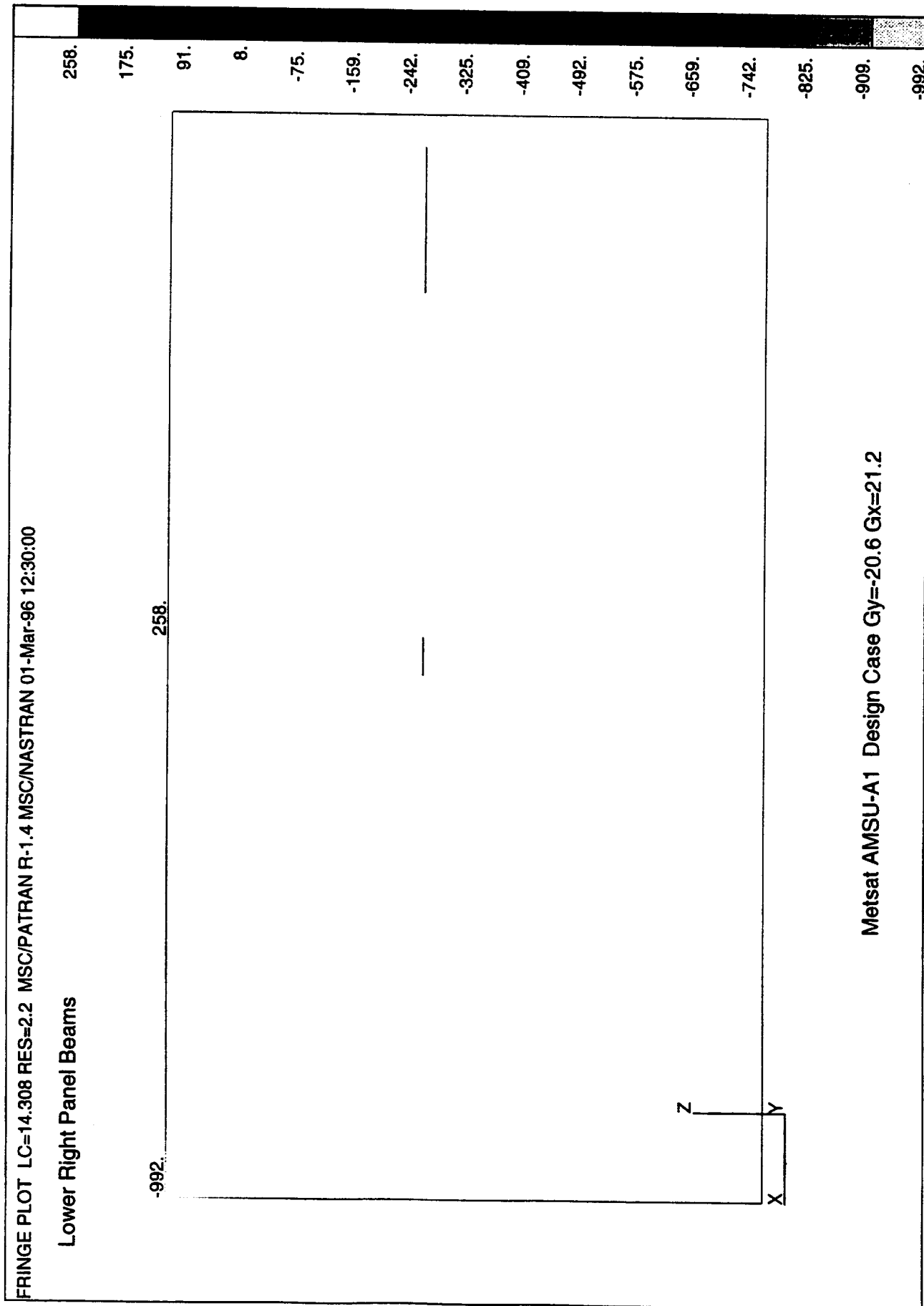
FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:19:07

Lower Right Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

752.
688.
625.
561.
497.
433.
370.
306.
242.
178.
115.
51.
-13.
-76.
-140.
-204.



Time: 14:32:44
Date: 02/29/96

Contour
Mode Scalar1

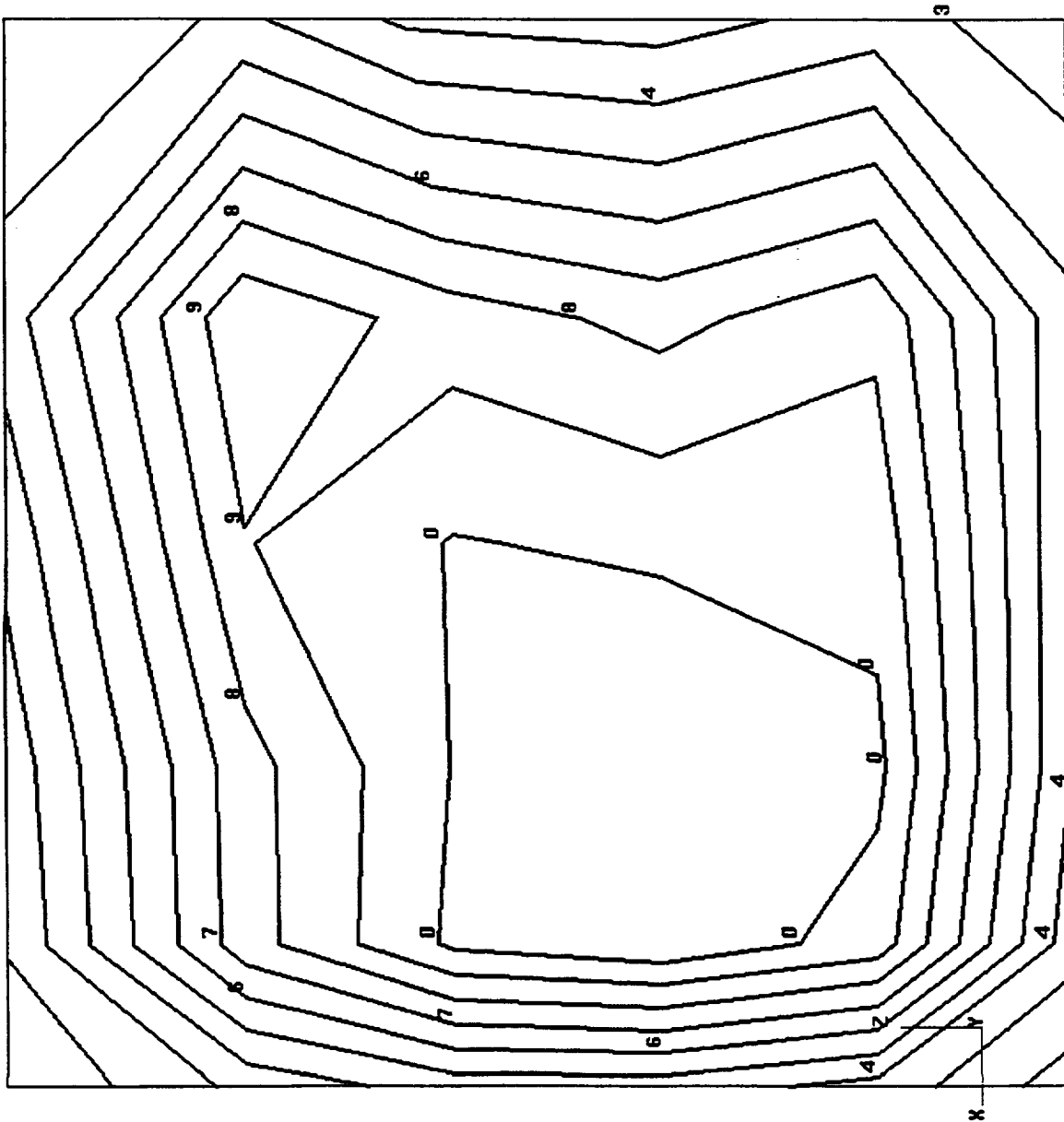
Color Index
— 0 0.814E+03
— 9 0.742E+03
— 8 0.671E+03
— 7 0.600E+03
— 6 0.529E+03
— 5 0.457E+03
— 4 0.386E+03
— 3 0.315E+03
— 2 0.244E+03
— 1 0.172E+03

Min = 1.723347E+02
Max = 8.848314E+02
Min ID= 1998
Max ID= 2673
Contour_7:
Stress Tensor

Von Mises
At Z1

Design_Oy=-20.6_ax=21.2
Static Subcase

Metsat AMSU-A1
Upper Right
Front Support



Time: 14:33:11
Date: 02/29/96

Contour
Mode Scalar1

Color Index

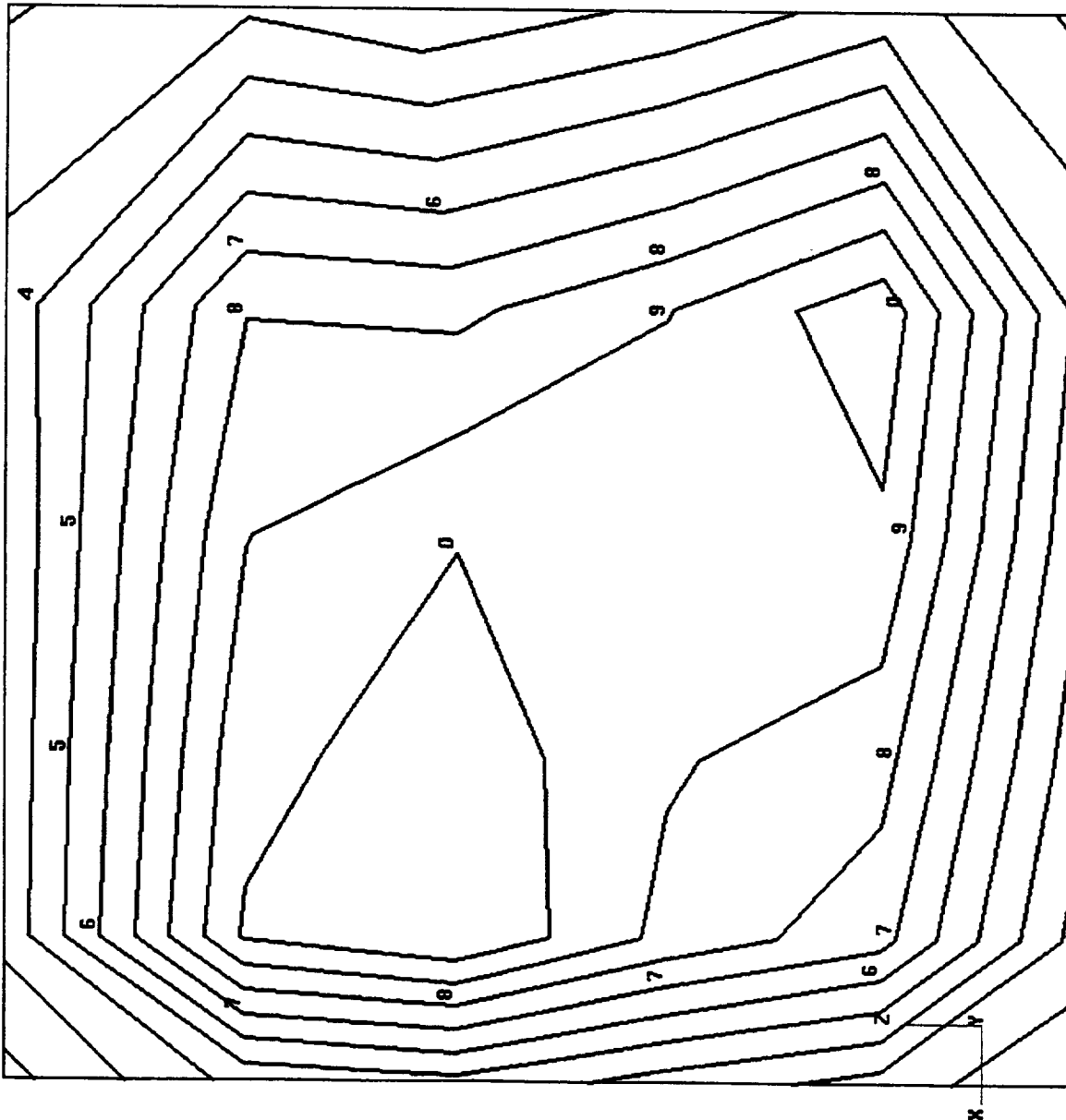
0	0.812E+03
9	0.742E+03
8	0.672E+03
7	0.602E+03
6	0.532E+03
5	0.462E+03
4	0.392E+03
3	0.322E+03
2	0.252E+03
1	0.182E+03

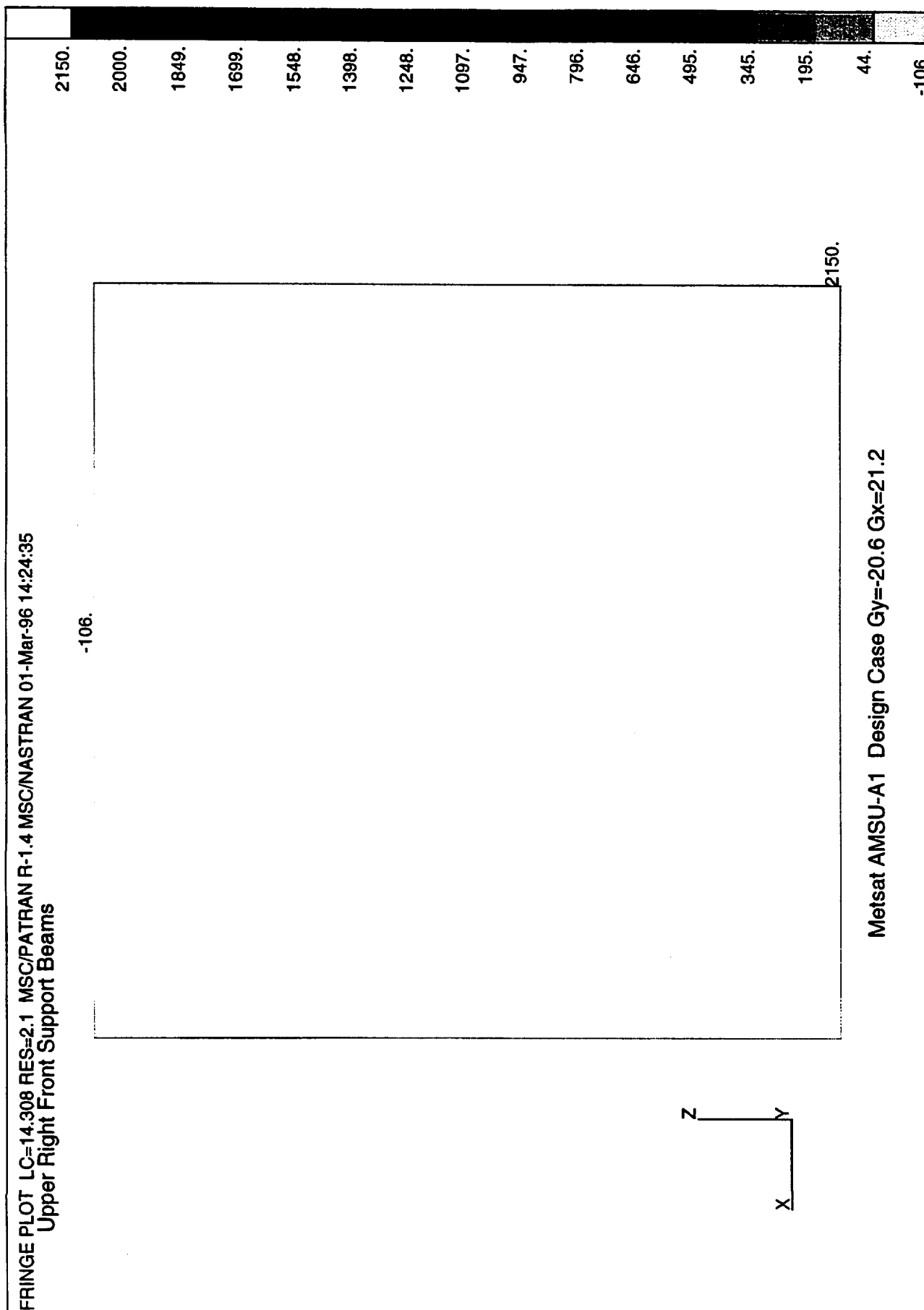
Min = 1.823536E+02
Max = 8.823721E+02
Min ID= 1519
Max ID= 2677
Contour_8:
Stress Tensor

Von Mises
At 22

Design_Gy=-20.6_0x=21.2
Static Subcase

Metsat AMSU-A1
Upper Right
Front Support



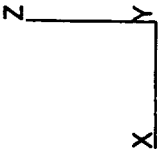


FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:24:41
Upper Right Front Support Beams

126.
.6
-125.
-251.
-377.
-503.
-628.
-754.
-880.
-1006.
-1132.
-1257.
-1383.
-1509.
-1635.
-1761.

-1761.

126.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 14:41:45
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.114E+04
9	0.103E+04
8	0.908E+03
7	0.791E+03
6	0.674E+03
5	0.556E+03
4	0.439E+03
3	0.321E+03
2	0.204E+03
1	0.867E+02

Min = 8.674242E+01
Max = 1.260555E+03

Min ID= 1993

Max ID= 2153

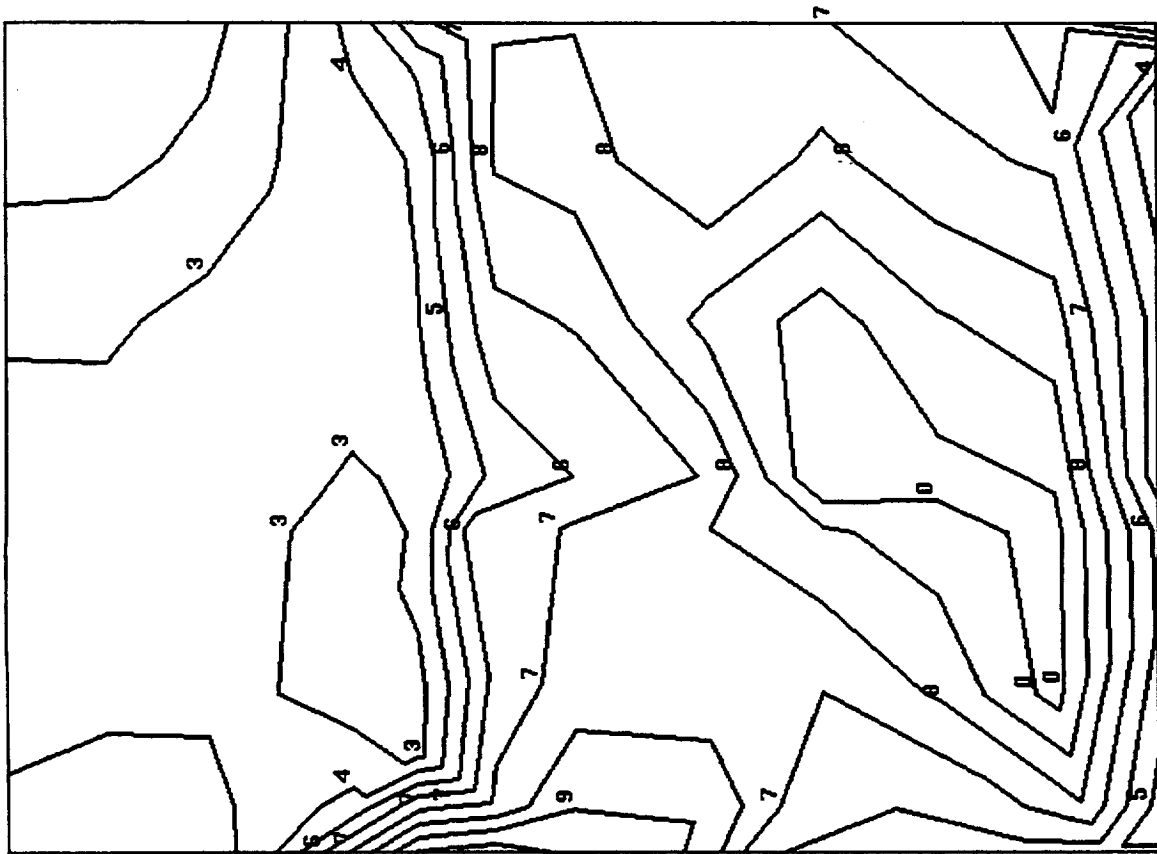
Contour_7:

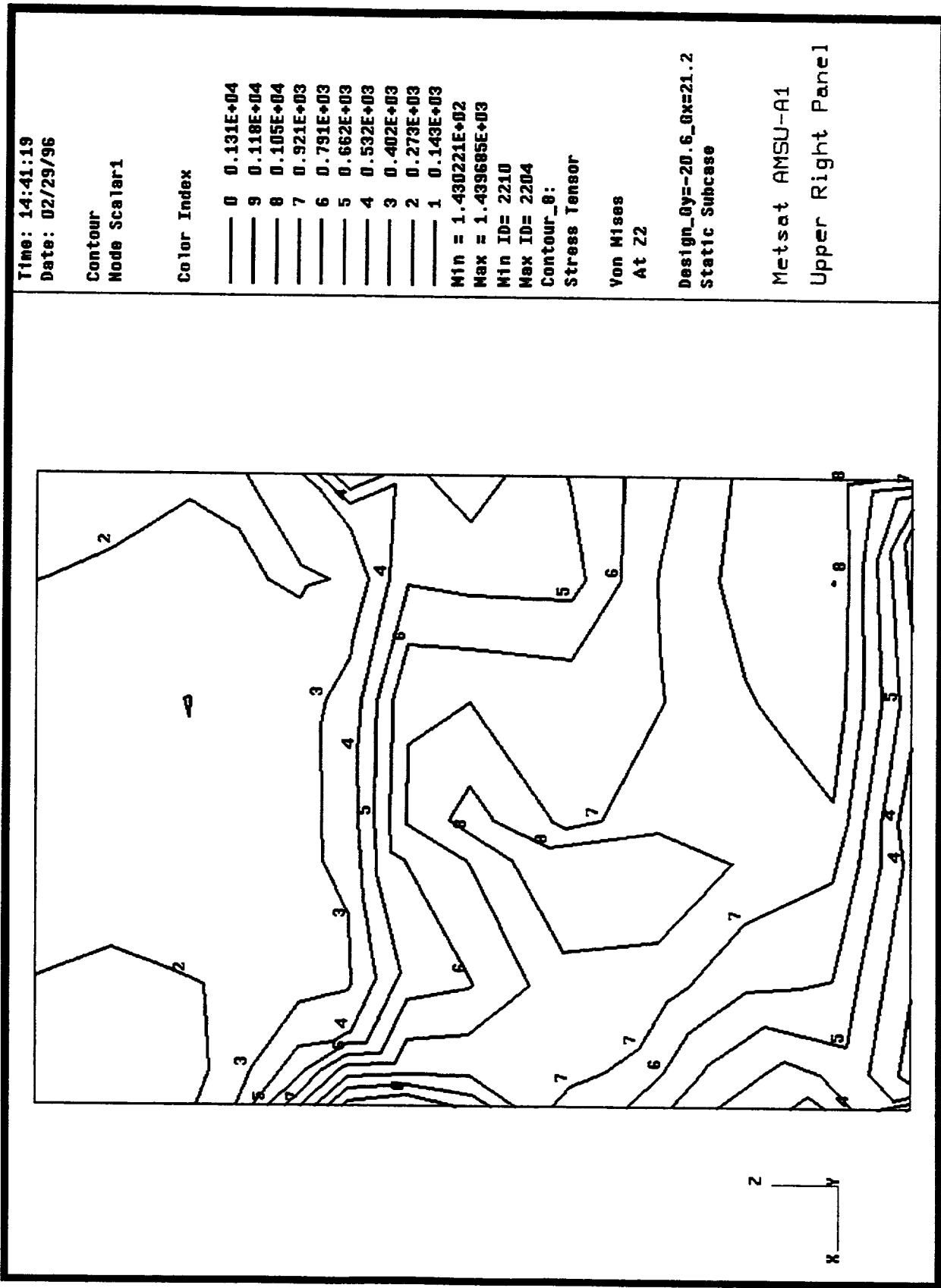
Stress Tensor

Von Mises
At 21

Design_Qy=-20.6_Qx=21.2
Static Subcase

Metsat AMSU-A1
Upper Right Panel

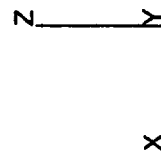




FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:19:13

Upper Right Panel Beams

-12.



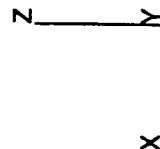
752.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

752.
701.
650.
599.
548.
497.
447.
396.
345.
294.
243.
192.
141.
90.
39.
-12.

FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:19:18

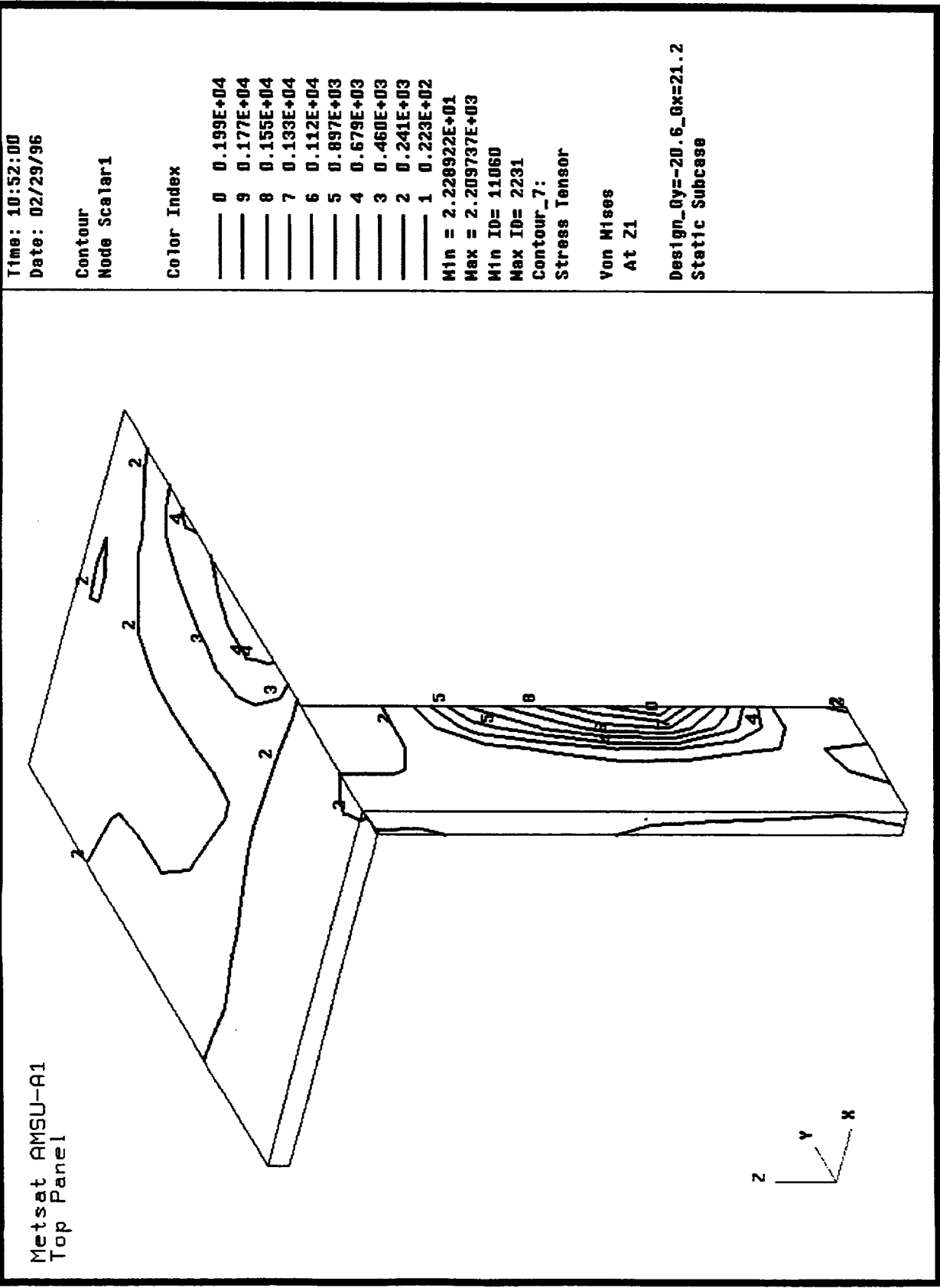
Upper Right Panel Beams

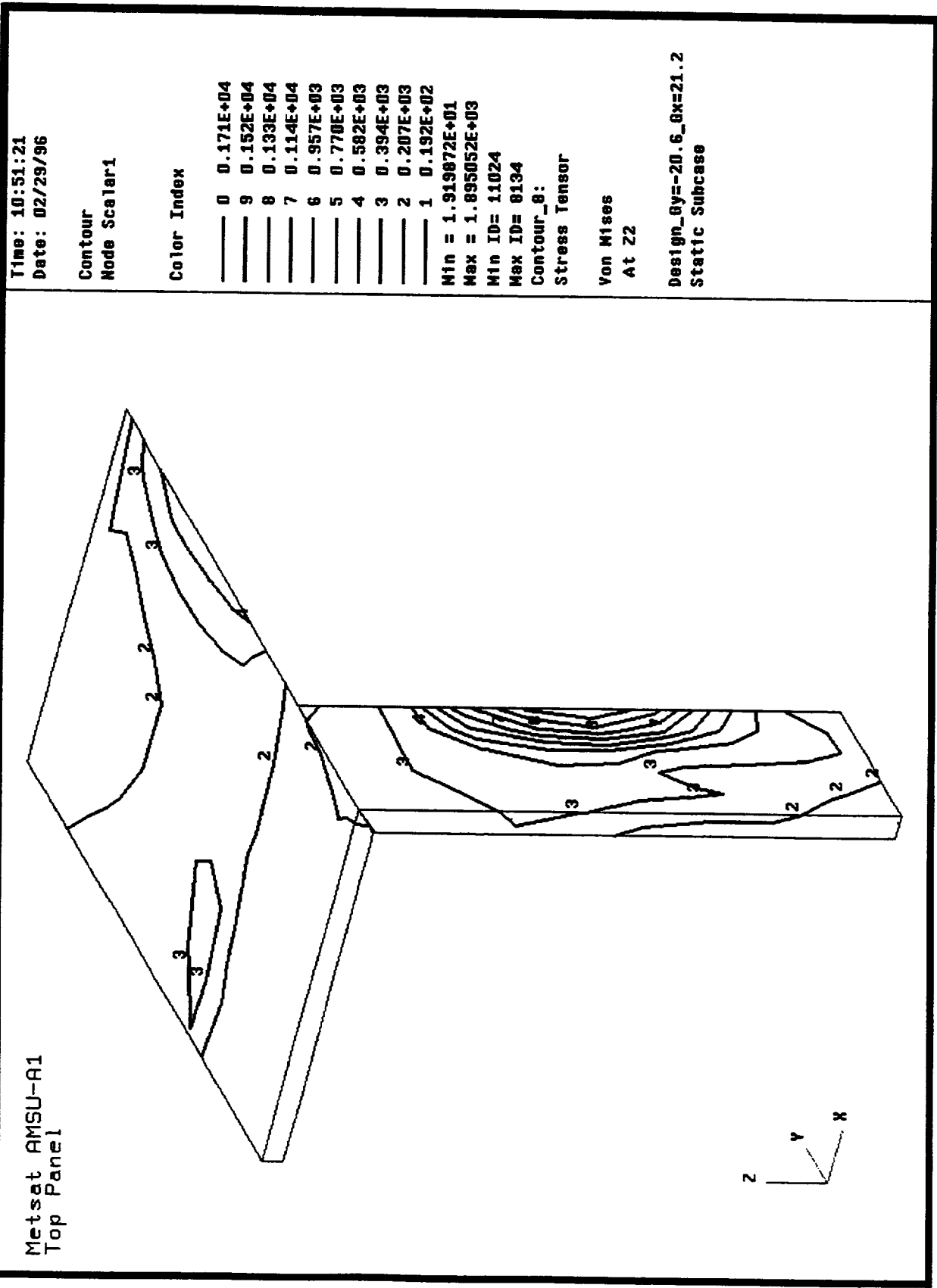


-992. 122.

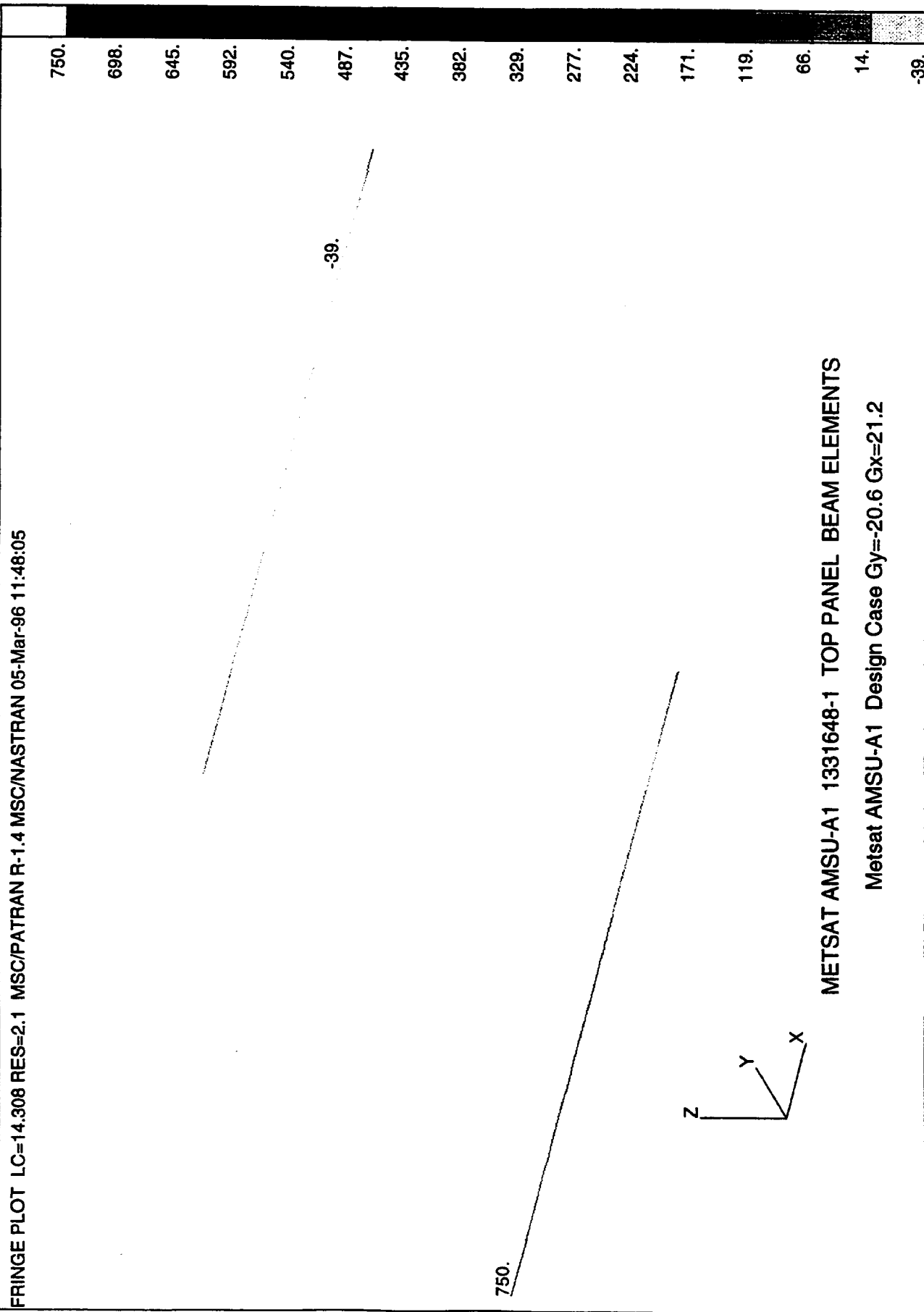
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

122.
47.
-27.
-101.
-175.
-250.
-324.
-398.
-472.
-547.
-621.
-695.
-769.
-844.
-918.
-992.



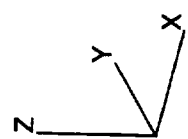
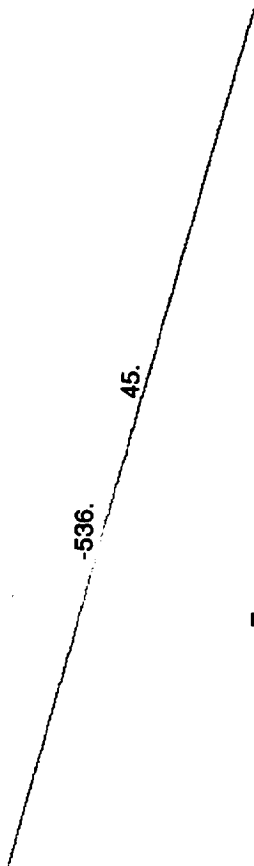
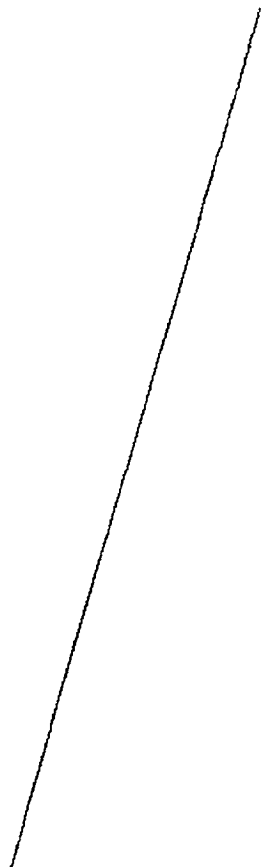


FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:48:05



FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:48:12

45.
6.
-33.
-72.
-110.
-149.
-188.
-226.
-265.
-304.
-343.
-381.
-420.
-459.
-498.
-536.



METSAT AMSU-A1 1331648-1 TOP PANEL BEAM ELEMENTS

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 13:55:39
Date: 02/29/96

Contour
Node Scalar1

Color Index

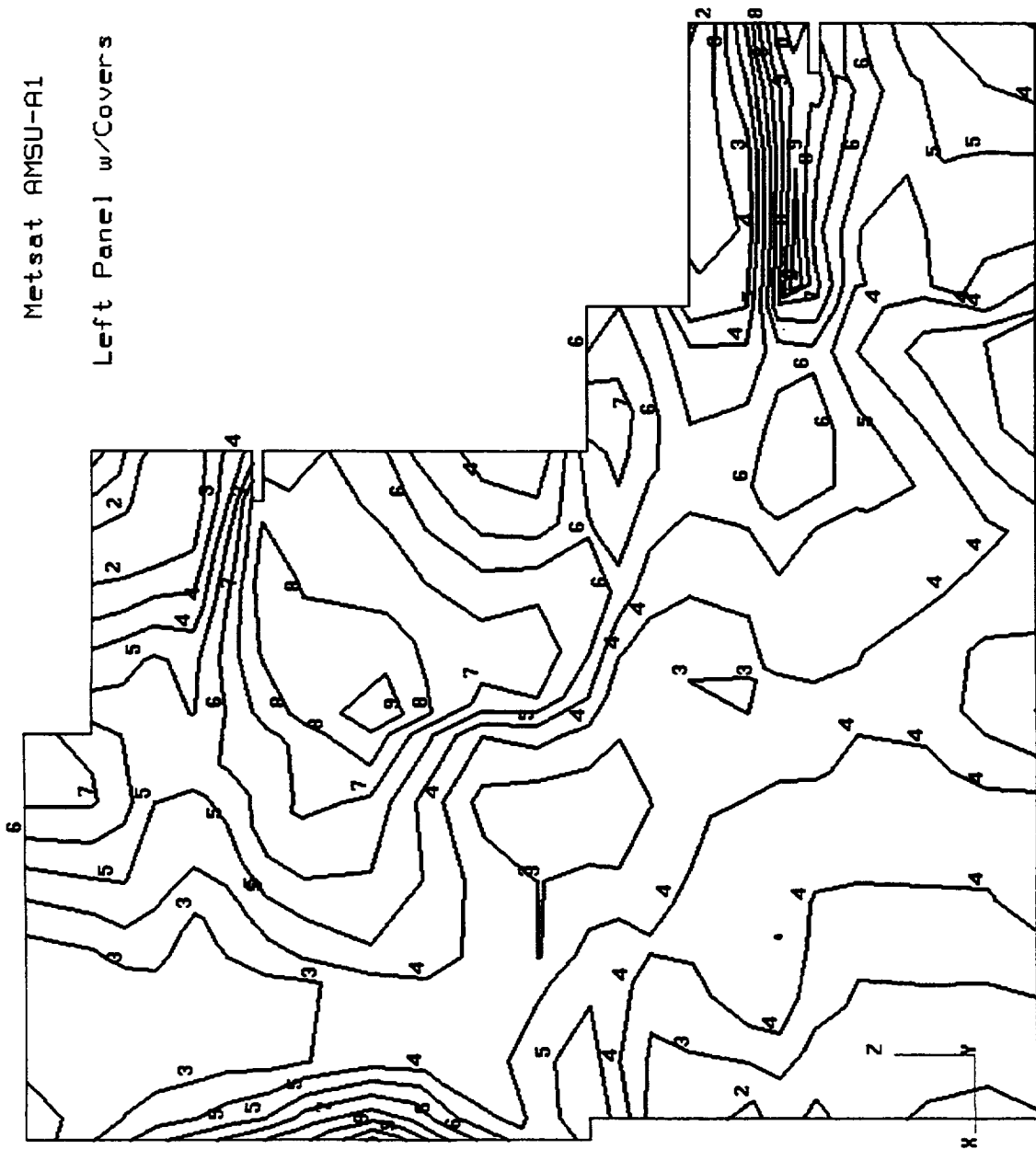
0	0.139E+04
9	0.125E+04
8	0.111E+04
7	0.975E+03
6	0.835E+03
5	0.695E+03
4	0.556E+03
3	0.416E+03
2	0.276E+03
1	0.136E+03

Min = 1.364609E+02
Max = 1.533900E+03
Min ID= 3212
Max ID= 3066
Contour_8:
Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0x=21.2
Static Subcase

Metsat AMSU-A1
Left Panel w/Covers



Time: 16:36:26
Date: 02/29/96

Contour
Node Scalar1

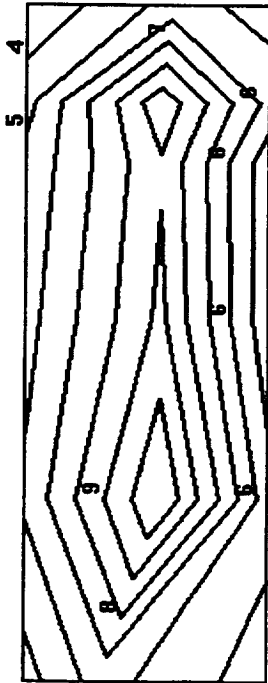
Color Index

—	0	0.197E+04
—	9	0.176E+04
—	8	0.155E+04
—	7	0.134E+04
—	6	0.113E+04
—	5	0.916E+03
—	4	0.705E+03
—	3	0.494E+03
—	2	0.282E+03
—	1	0.709E+02

Min = 7.088276E+01
Max = 2.184350E+03
Min ID= 1938
Max ID= 2914
Contour_7:
Stress Tensor

Von Mises
At Z1

Design_Gy=-20.6_Gx=21.2
Static Subcase

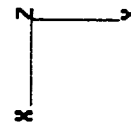


Lower Left

Metsat AMSU-A1
Shields



Lower Right



Time: 16:48:45
Date: 02/29/96

Contour
Node Scalar1

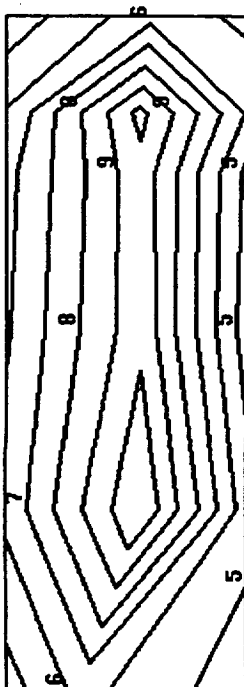
Color Index

0	0.196E+04
9	0.175E+04
8	0.154E+04
7	0.133E+04
6	0.111E+04
5	0.903E+03
4	0.690E+03
3	0.478E+03
2	0.266E+03
1	0.536E+02

Min = 5.363605E+01
Max = 2.176121E+03
Min ID= 1938
Max ID= 2914
Contour_8:
Stress Tensor

Von Mises
At 22

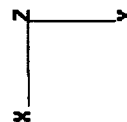
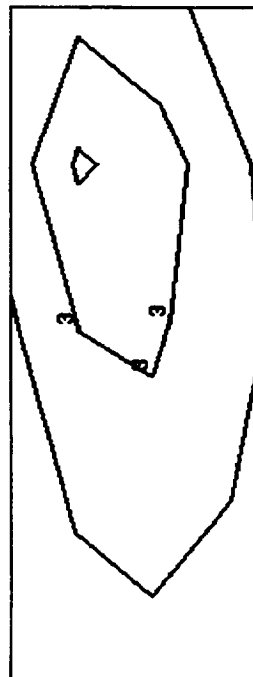
Design_Qy=-20.6_Qx=21.2
Static Subcase



Lower Left

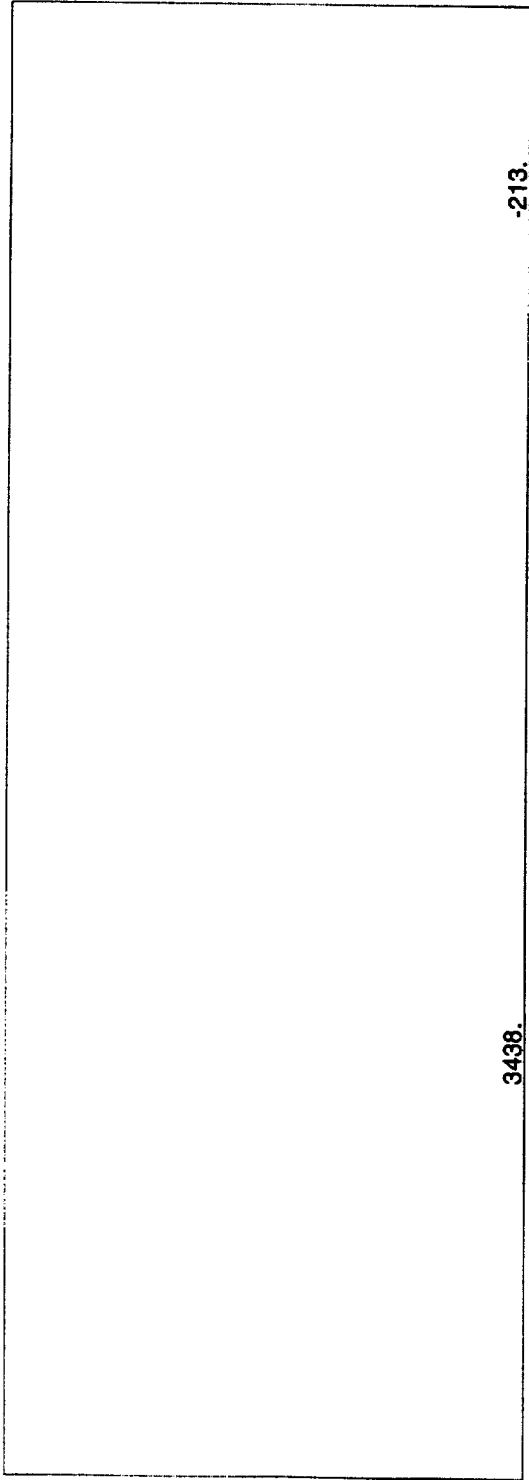
Metsat AMSU-A1
Shields

Lower Right

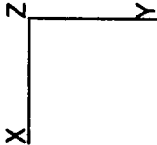


FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:32:02

Lower Left Shield Beams

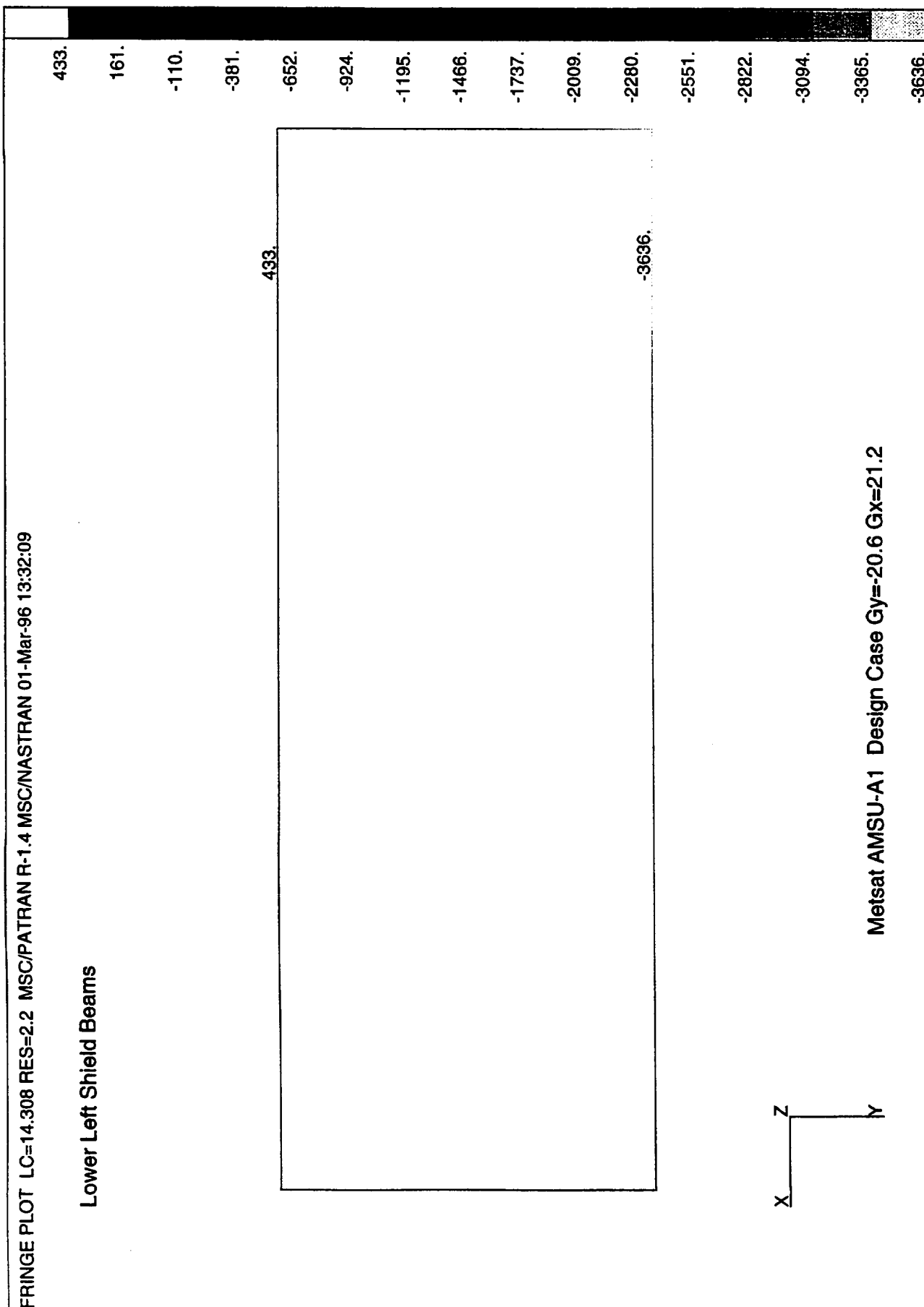


-213.0



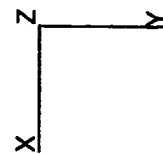
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

3438.0
3195.0
2951.0
2708.0
2464.0
2221.0
1978.0
1734.0
1491.0
1247.0
1004.0
761.0
517.0
274.0
30.0
-213.0



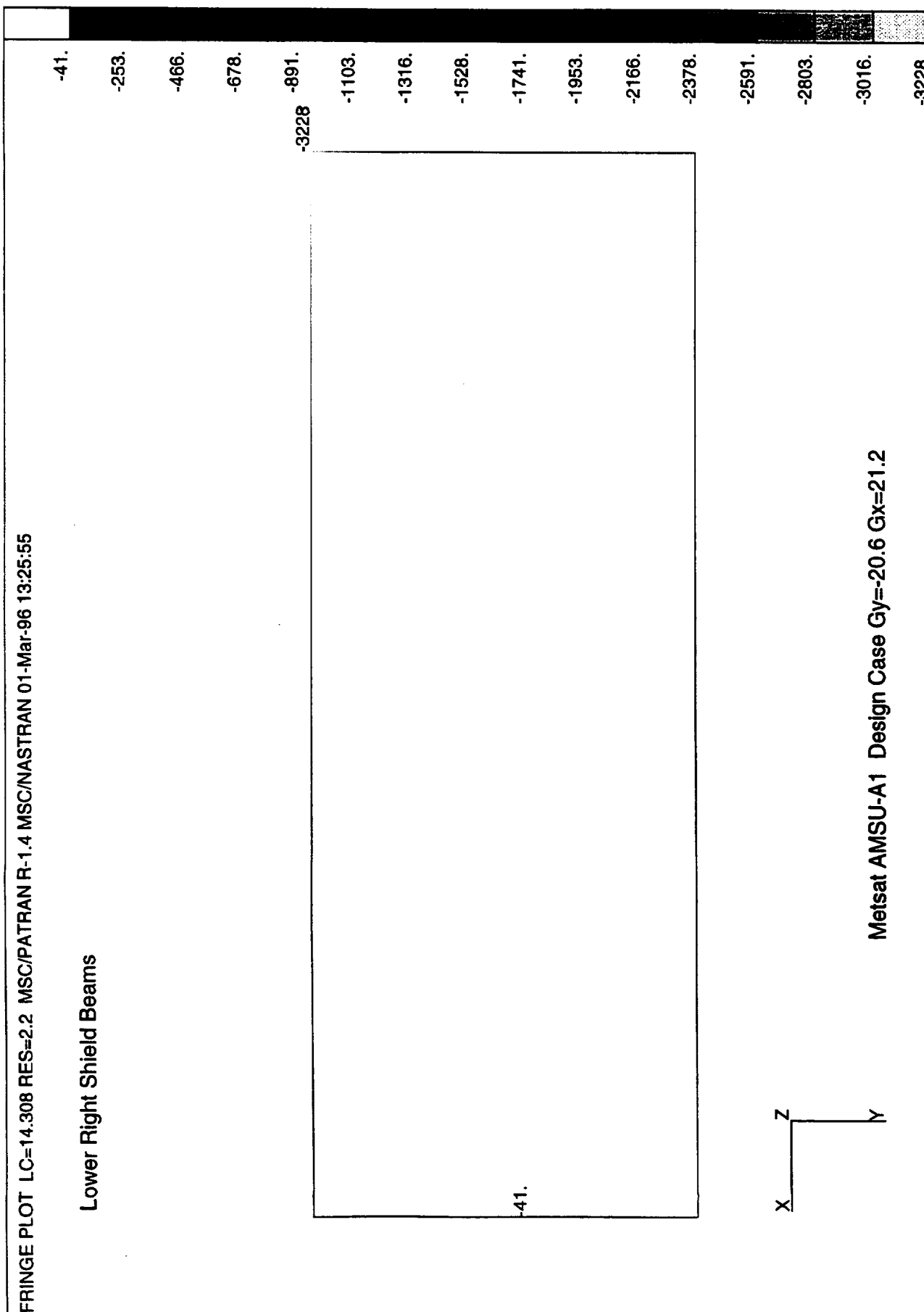
FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:25:48

Lower Right Shield Beams

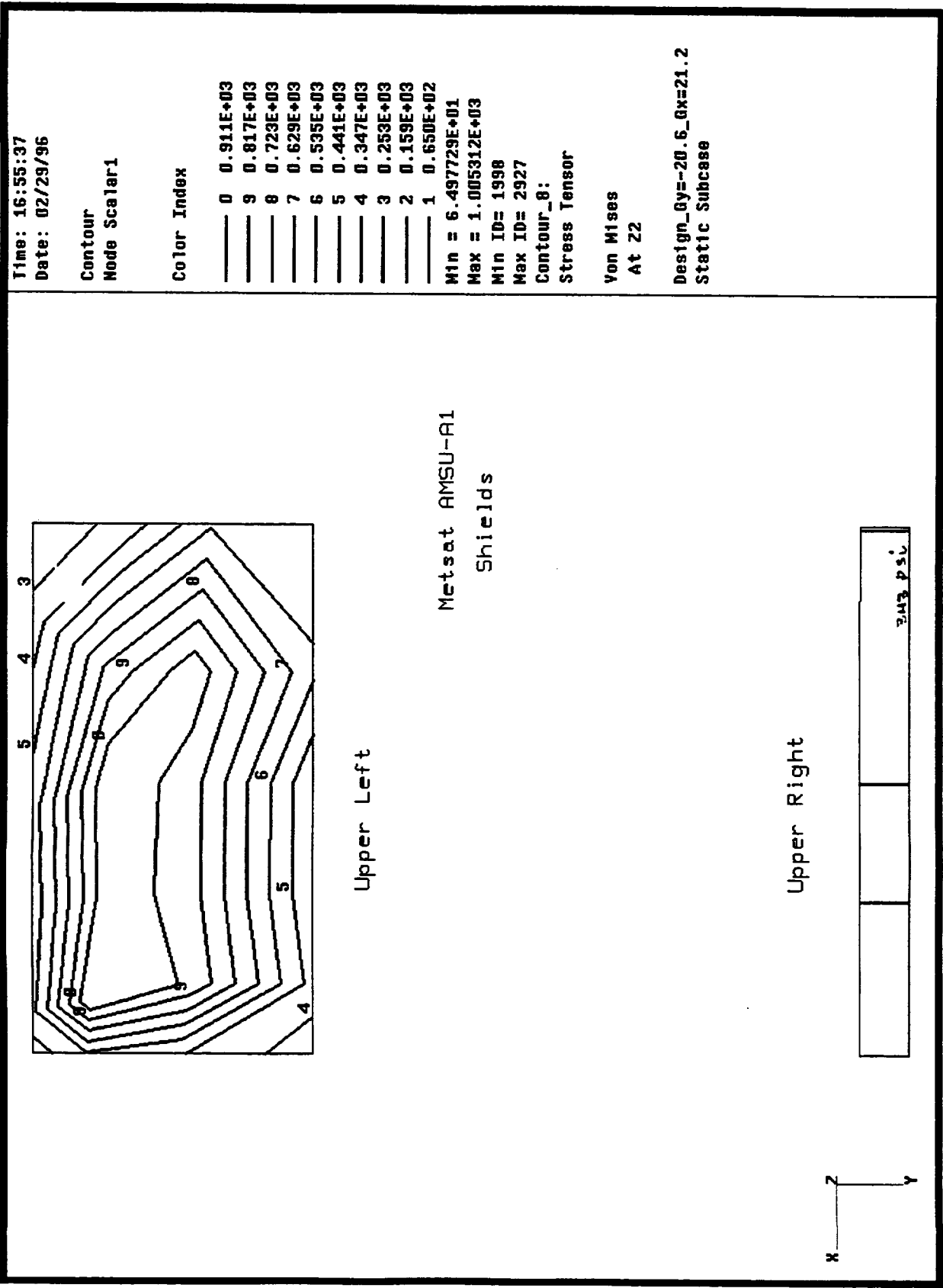


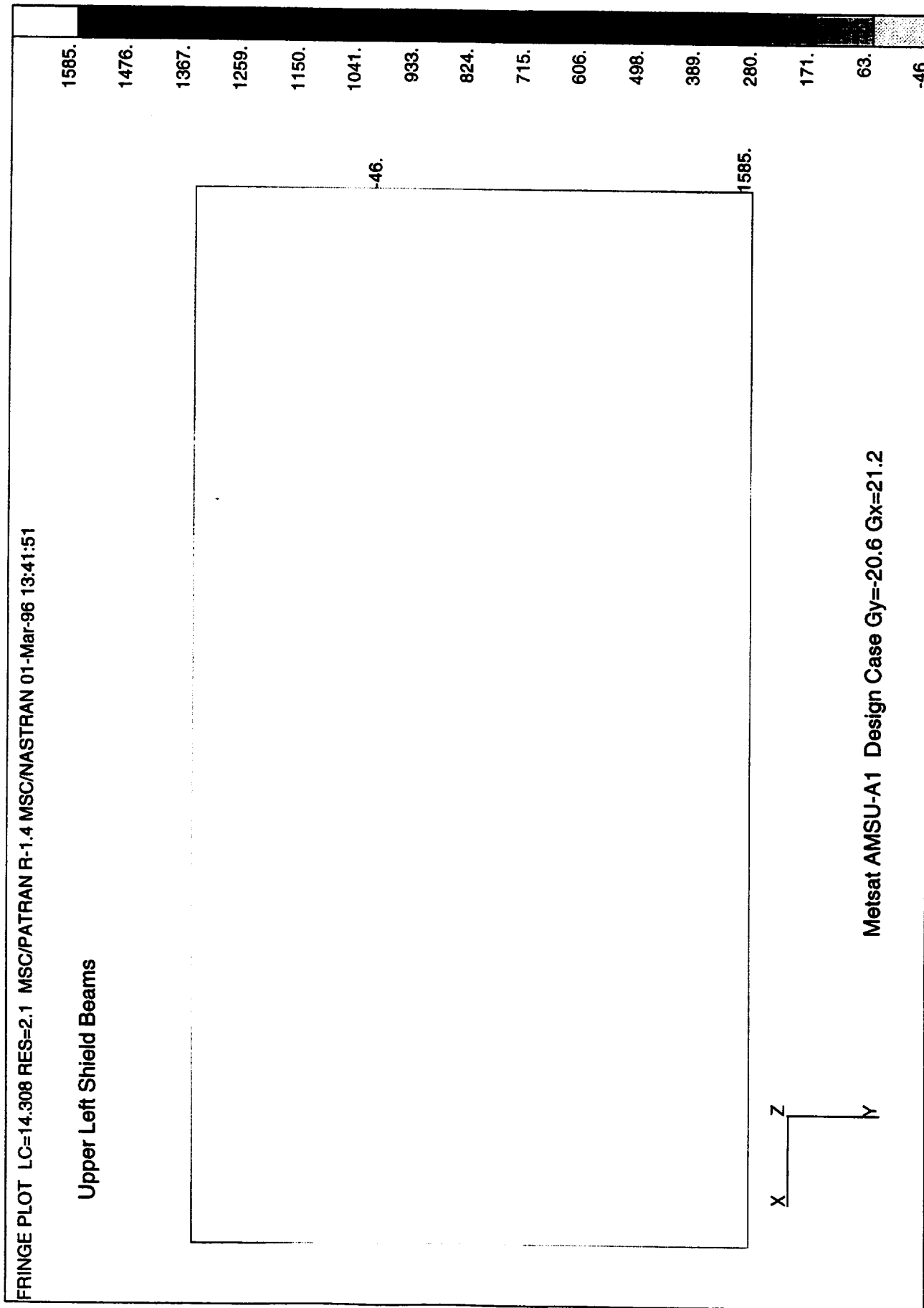
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

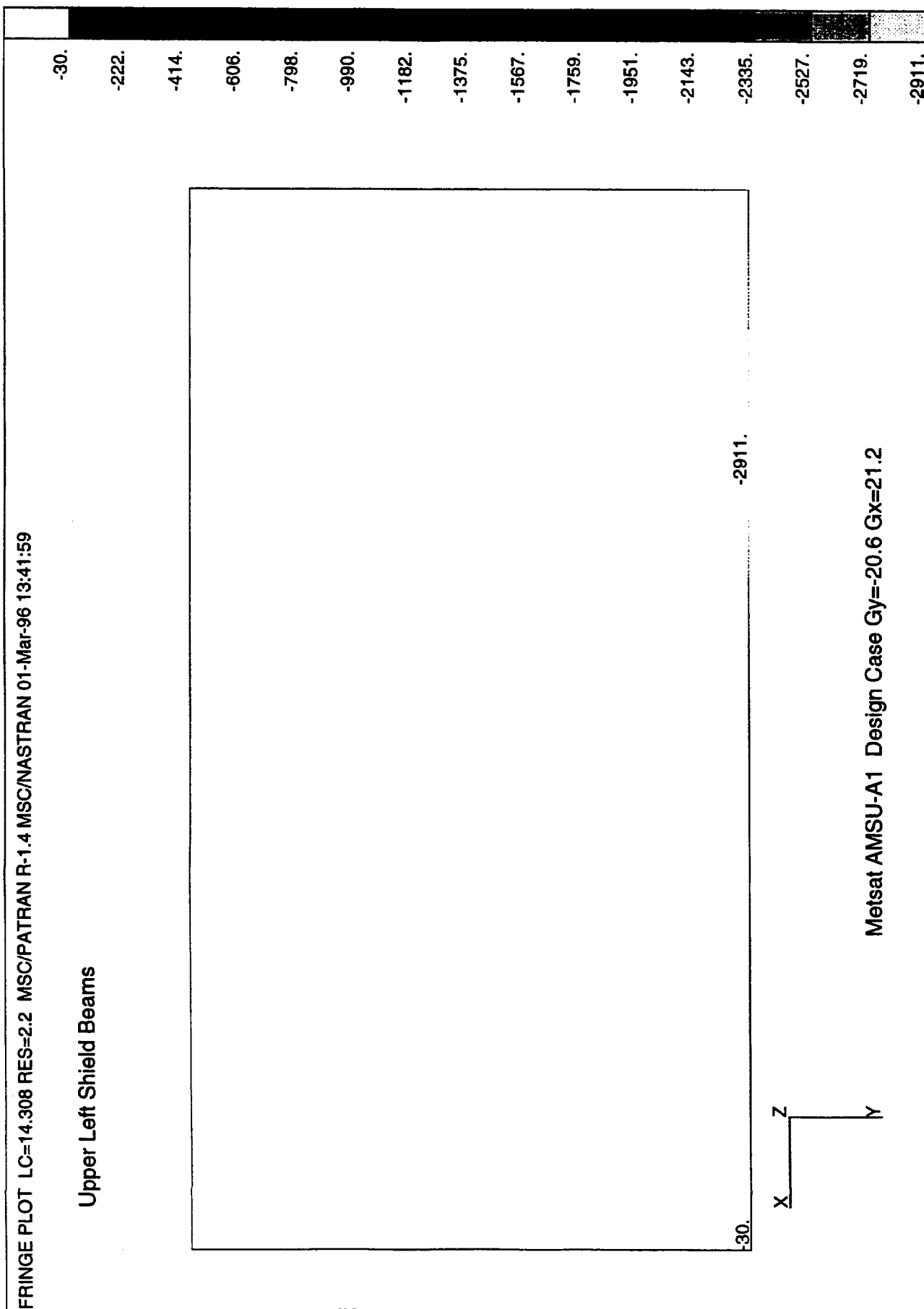
2023.
1869.
1715.
1560.
1406.
2023.
-289.
1252.
1098.
944.
790.
636.
481.
327.
173.
19.
-135.
-289.

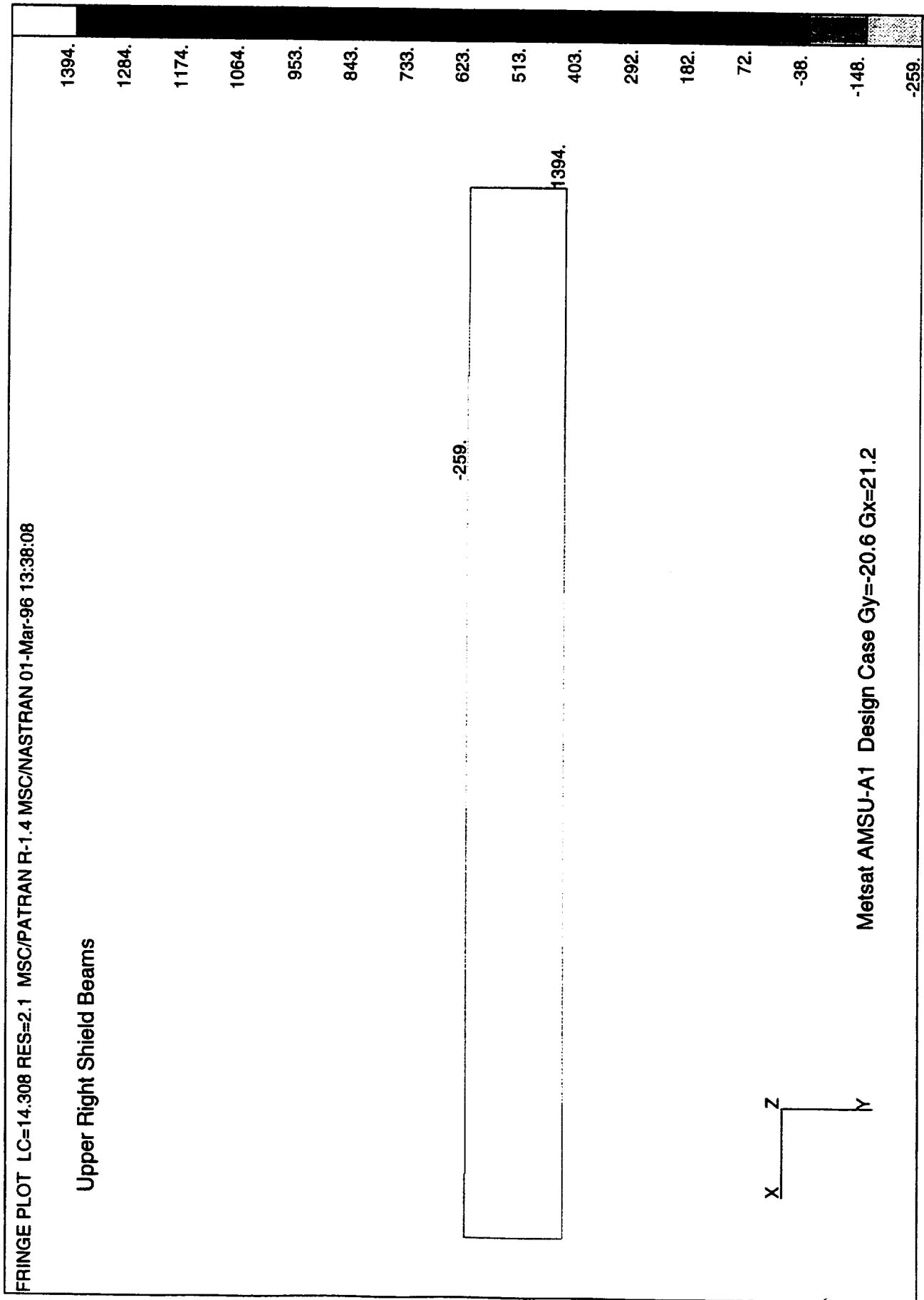


Design_Gy=-20.6_Gx=21.2 Static Subcase



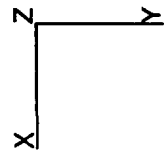






FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:38:15

Upper Right Shield Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

-332.
-427.
-522.
-617.
-713.
-808.
-903.
-999.
-1094.
-1189.
-1284.
-1380.
-1475.
-1570.
-1665.
-1761.

Metsat AMSU-A1
Lower Card Cage/Cards

Time: 12:35:56
Date: 02/29/96

Contour
Node Scalar1

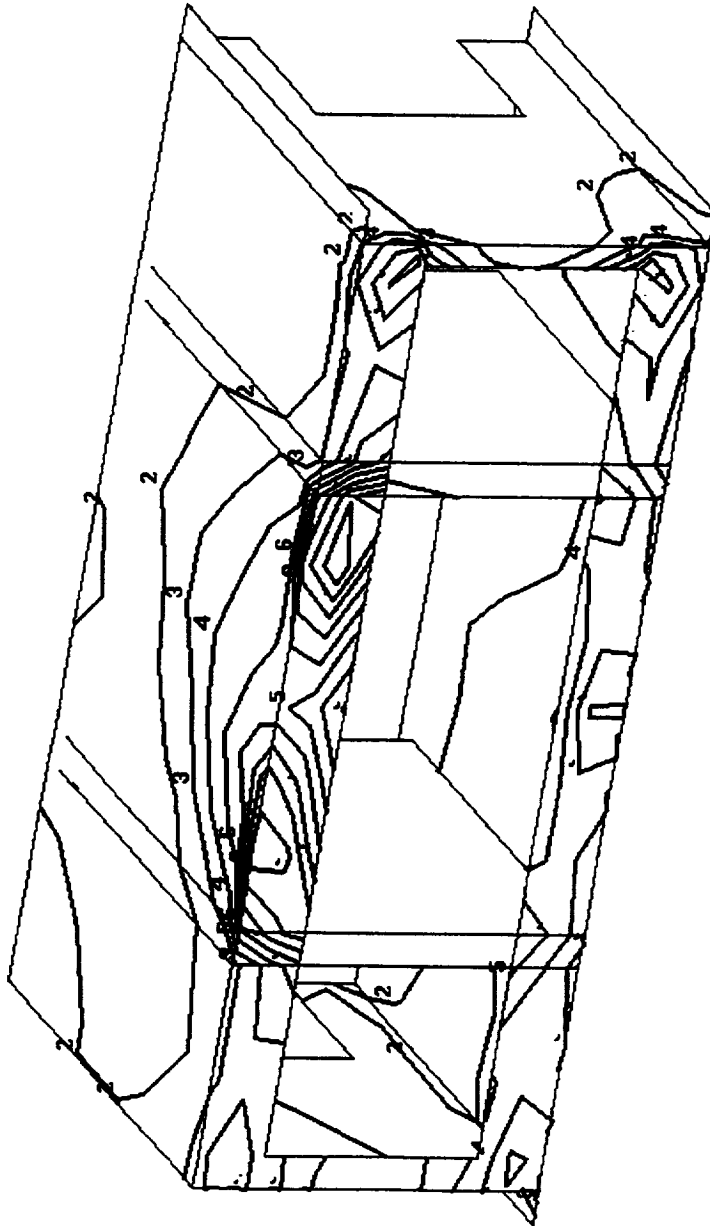
Color Index

0	0.248E+04
9	0.221E+04
8	0.194E+04
7	0.166E+04
6	0.139E+04
5	0.112E+04
4	0.848E+03
3	0.576E+03
2	0.304E+03
1	0.323E+02

M1n = 3.230742E+01
Max = 2.752401E+03
M1n ID= 5536
Max ID= 3726
Contour_7:
Stress Tensor

Von Mises
At Z1

Design_Qy=-20.6_Ox=21.2
Static Subcase



Time: 12:36:28
Date: 02/29/96

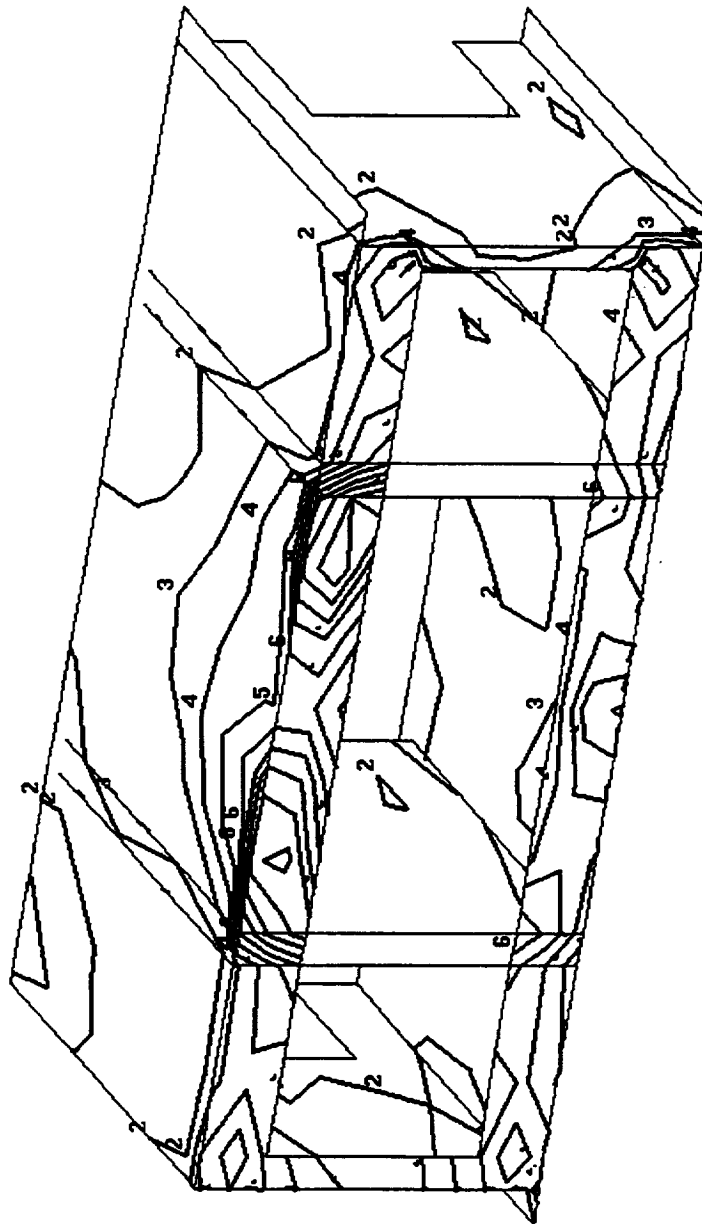
Metsat AMSU-A1
Lower Card Cage/Cards

Contour
Node Scalar1

Color Index

—	0	0.227E+04
—	9	0.202E+04
—	8	0.177E+04
—	7	0.152E+04
—	6	0.127E+04
—	5	0.103E+04
—	4	0.778E+03
—	3	0.530E+03
—	2	0.281E+03
—	1	0.328E+02

Min = 3.279301E+01
Max = 2.516617E+03
Min ID= 5536
Max ID= 3726
Contour_0:
Stress Tensor
von Mises
At 22
Design_Qy=-20.6_0x=21.2
Static Subcase



Metsat AMSU-A1 Lower Card Cage Card

Time: 06:01:02
Date: 03/01/96

Contour
Node Scalar1

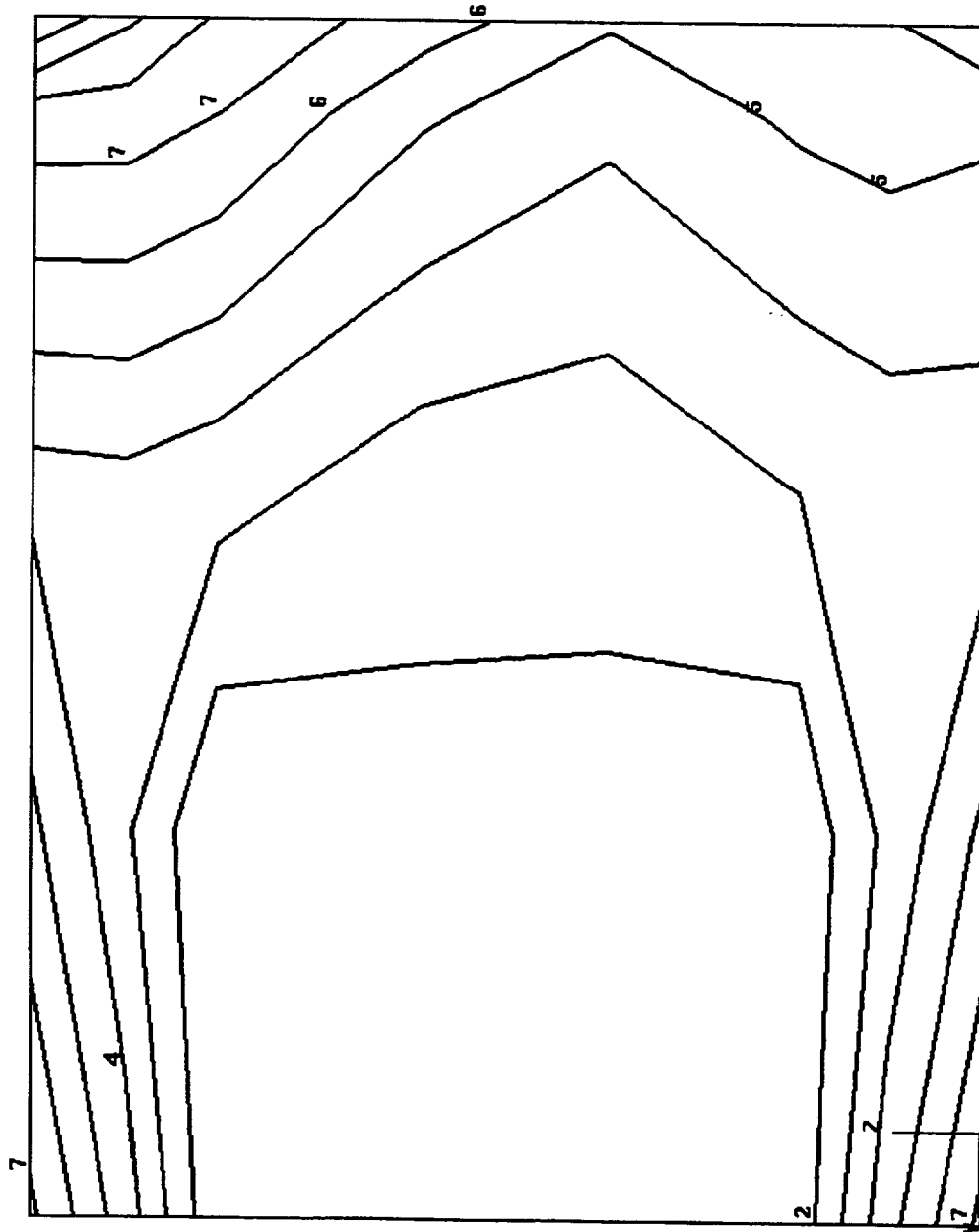
Color Index

0	0.768E+03
9	0.714E+03
8	0.659E+03
7	0.605E+03
6	0.550E+03
5	0.495E+03
4	0.441E+03
3	0.386E+03
2	0.332E+03
1	0.277E+03

Min = 2.773015E+02
Max = 8.227571E+02
Min ID= 4716
Max ID= 4702
Contour_7:
Stress Tensor

Von Mises
At Z1

Design_Qy=-20.6_Ox=21.2
Static Subcase



Time: 05:59:55
Date: 03/01/96

Metsat AMSU-A1 Lower Card Cage Card

Contour
Node Scalar1

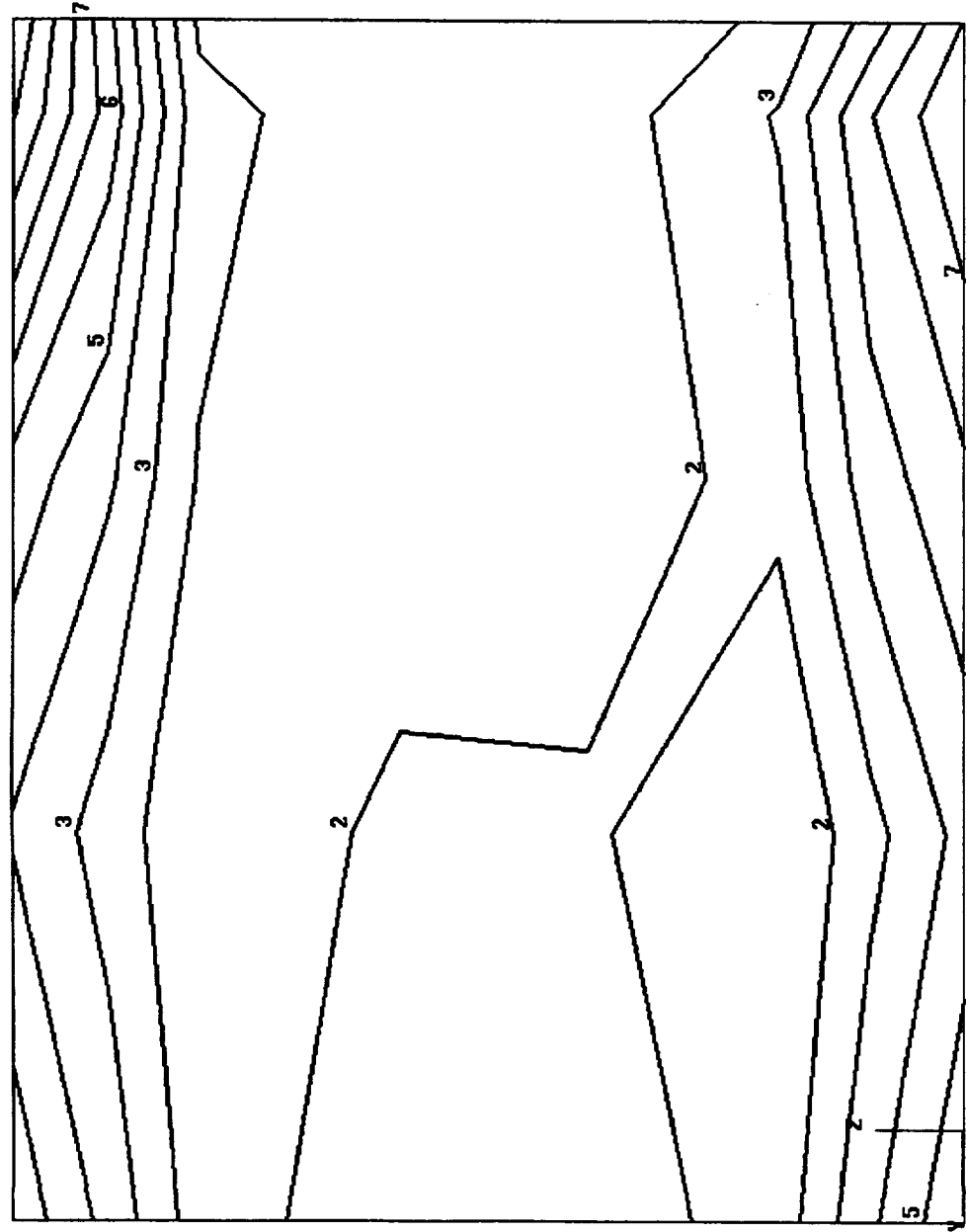
Color Index

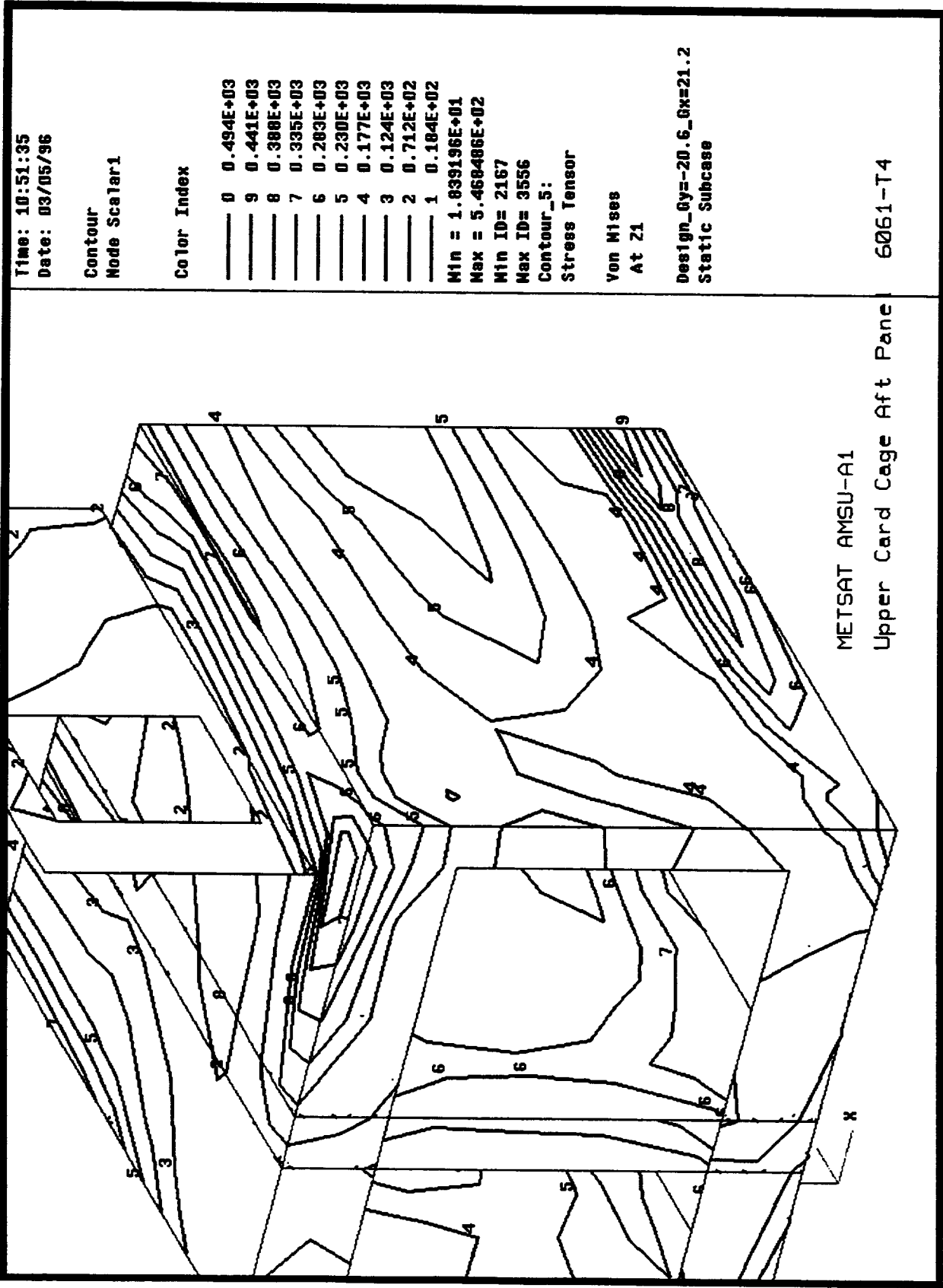
—	0	0.797E+03
—	9	0.741E+03
—	8	0.685E+03
—	7	0.630E+03
—	6	0.574E+03
—	5	0.518E+03
—	4	0.463E+03
—	3	0.407E+03
—	2	0.351E+03
—	1	0.295E+03

Min = 2.953435E+02
Max = 8.526671E+02
Min ID= 4712
Max ID= 4702
Contour_8:
Stress Tensor

Von Mises
At 22

Design_0y=-20.6_Gx=21.2
Static Subcase





Time: 10:52:25
Date: 03/05/96

Contour
Node Scalar1

Color Index

—	0	0.668E+03
—	9	0.596E+03
—	8	0.525E+03
—	7	0.453E+03
—	6	0.382E+03
—	5	0.310E+03
—	4	0.238E+03
—	3	0.167E+03
—	2	0.954E+02
—	1	0.238E+02

Min = 2.383665E+01

Max = 7.392729E+02

Min ID= 2448

Max ID= 3583

Contour_6:

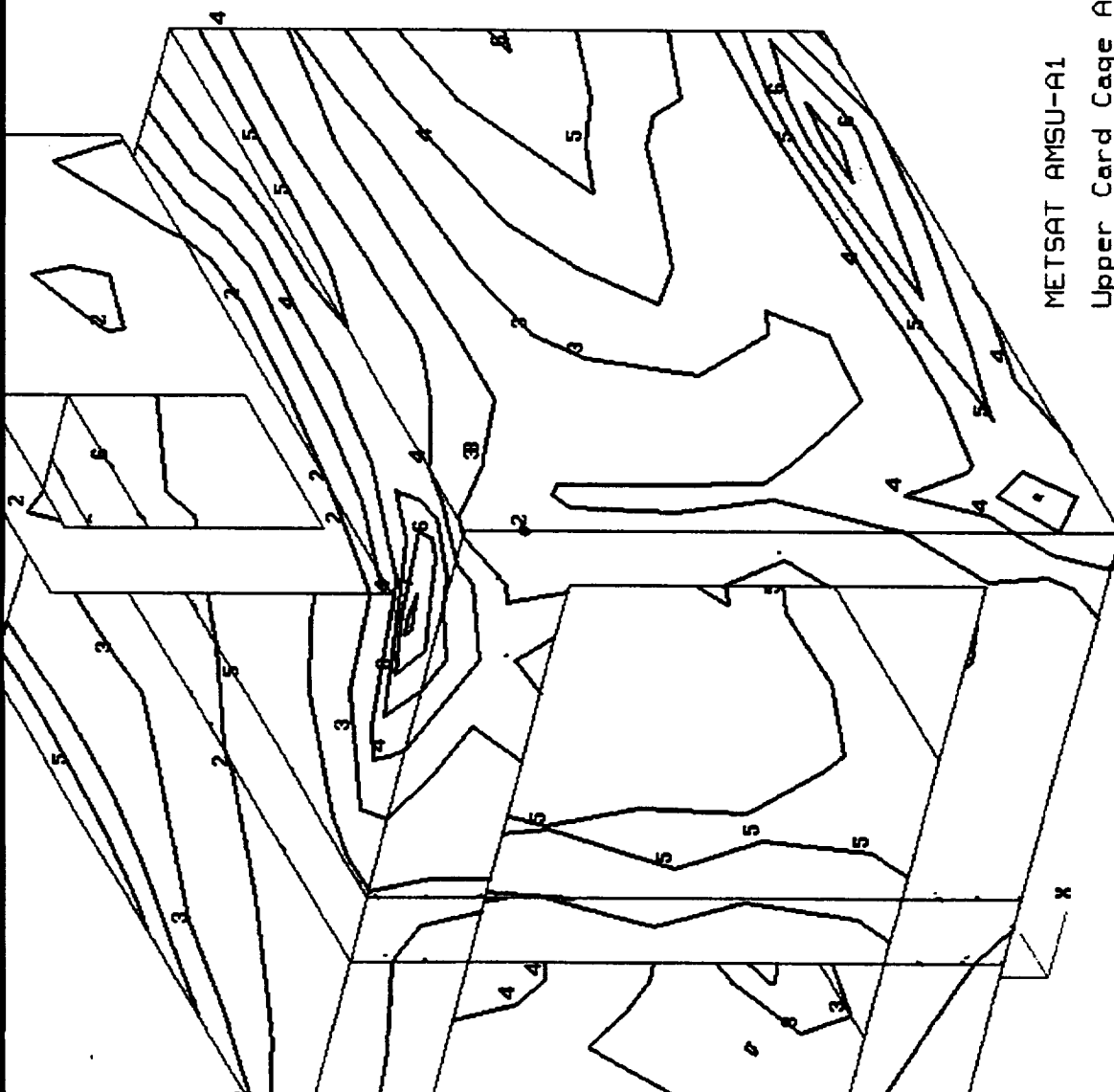
Stress Tensor

Von Mises

At 22

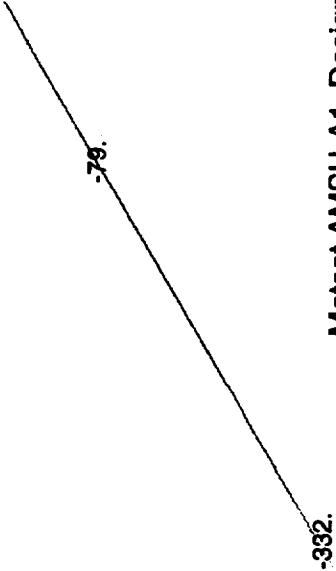
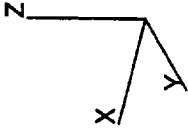
Design_Qy=-20.6_Gx=21.2
Static Subcase

6061-T4



FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:12:25

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL
BEAM ELEMENTS



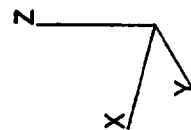
Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

- 79.
- 96.
- 113.
- 130.
- 147.
- 164.
- 180.
- 197.
- 214.
- 231.
- 248.
- 265.
- 282.
- 298.
- 315.
- 332.

FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:12:19

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL

BEAM ELEMENTS



21.

290.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

290.

272.

254.

236.

218.

200.

182.

164.

147.

129.

111.

93.

75.

57.

39.

21.

Metsat AMSU-A1 Upper Card

Time: 15:42:43
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.482E+03
1	0.441E+03
2	0.400E+03
3	0.359E+03
4	0.318E+03
5	0.278E+03
6	0.237E+03
7	0.196E+03
8	0.155E+03
9	0.114E+03

Min = 1.143689E+02

Max = 5.225964E+02

Min ID= 11852

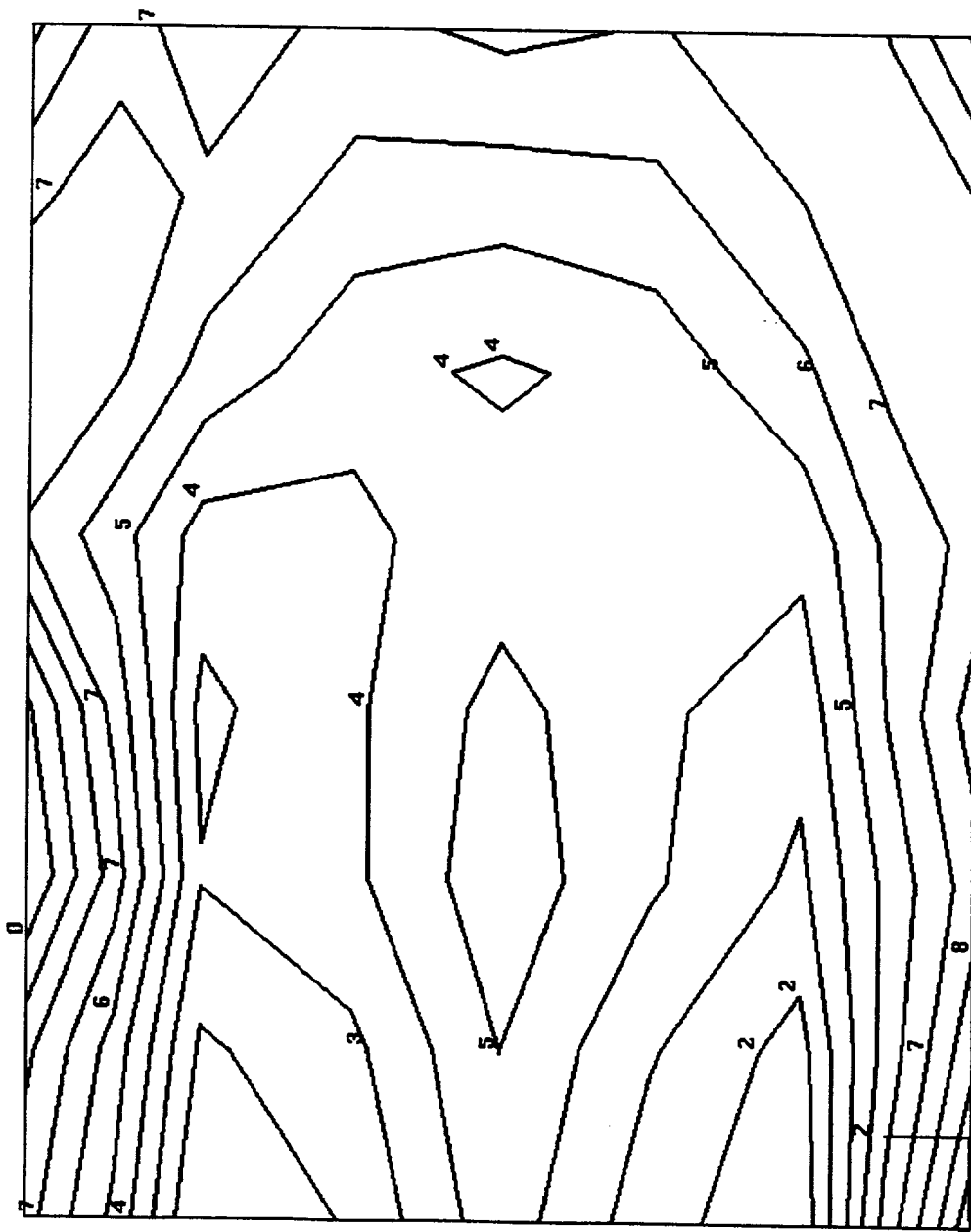
Max ID= 11838

Contour_7:

Stress Tensor

Von Mises
At 21

Design_0y=-20.6_0x=21.2
Static Subcase



Metsat AMSU-A1 Upper Card

Time: 15:54:39
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.484E+03
9	0.443E+03
8	0.402E+03
7	0.360E+03
6	0.319E+03
5	0.278E+03
4	0.237E+03
3	0.196E+03
2	0.155E+03
1	0.114E+03

Min = 1.140347E+02

Max = 5.248143E+02

Min ID= 11292

Max ID= 11334

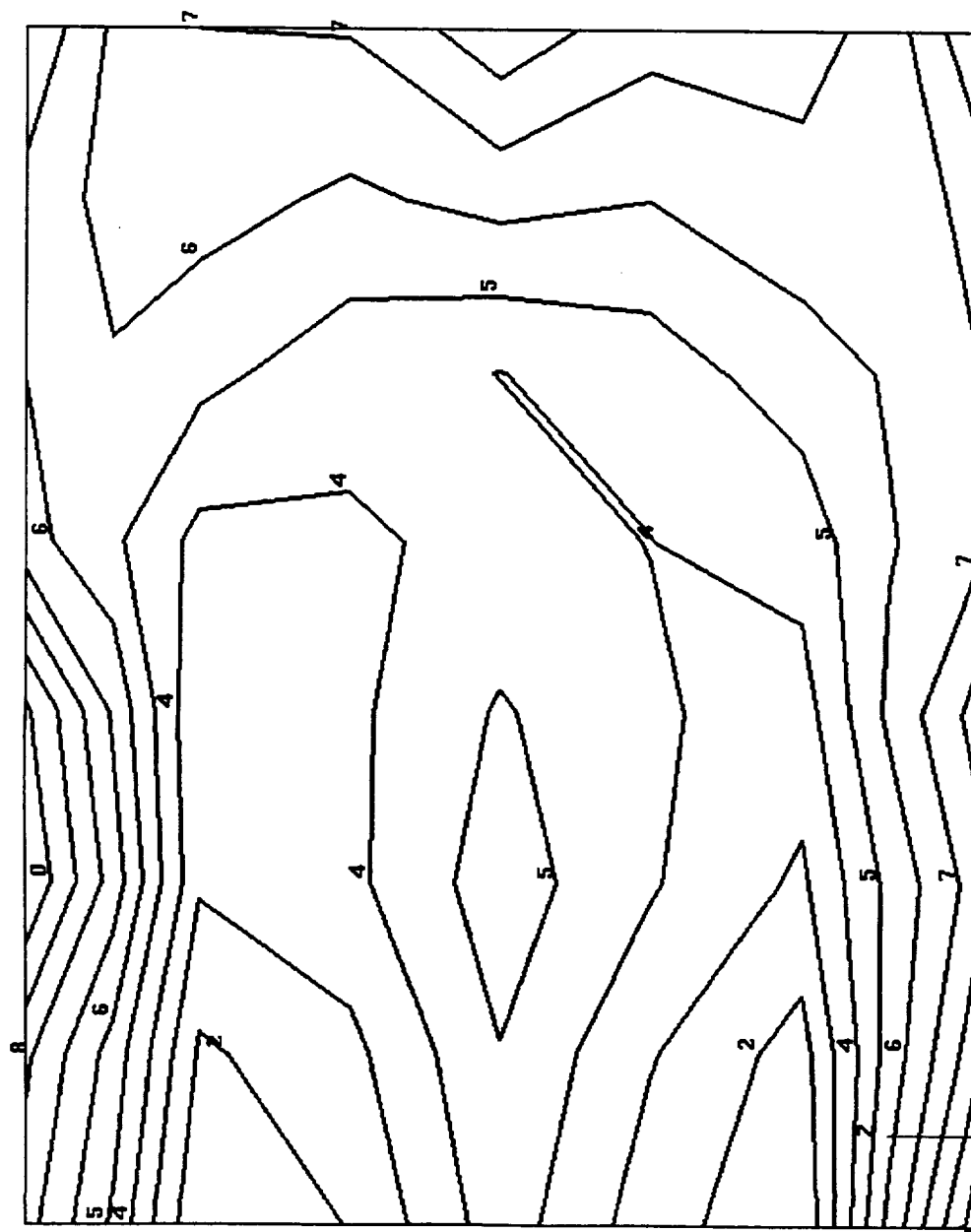
Contour_8:

Stress Tensor

Von Mises

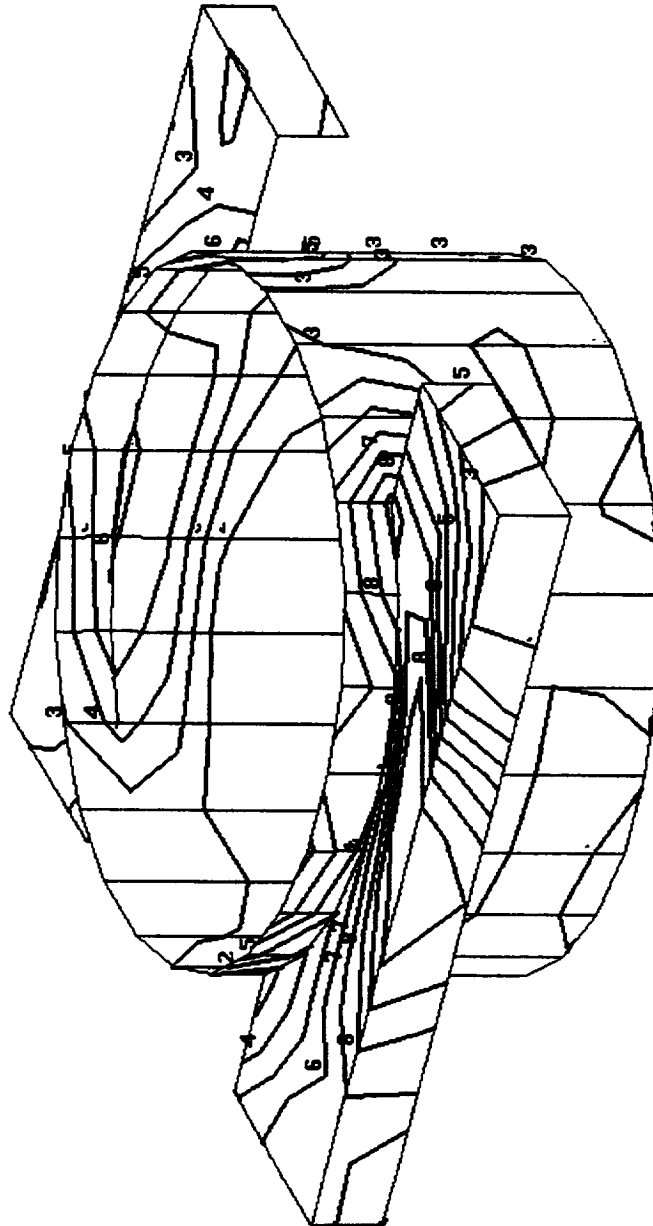
At 22

Design_0y=-20.6_0x=21.2
Static Subcase



Metsat AMSU-A1

Lower Warmload w/Supports



Time: 10:00:13
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.847E+03
9	0.757E+03
8	0.667E+03
7	0.576E+03
6	0.486E+03
5	0.396E+03
4	0.305E+03
3	0.215E+03
2	0.125E+03
1	0.342E+02

Min = 3.423618E+01

Max = 9.376443E+02

Min ID= 4908

Max ID= 3018

Contour_7:

Stress Tensor

Von Mises

At Z1

Design_0y=-20.6_0x=21.2
Static Subcase

Metsat AMSU-A1

Lower Warmload w/Supports

Time: 10:01:18
Date: 02/29/96

Contour
Node Scalar2

Color Index

0	0.952E+03
9	0.851E+03
8	0.749E+03
7	0.648E+03
6	0.546E+03
5	0.445E+03
4	0.343E+03
3	0.242E+03
2	0.140E+03
1	0.386E+02

Min = 3.857001E+01
Max = 1.053541E+03

Min ID= 5043

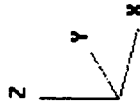
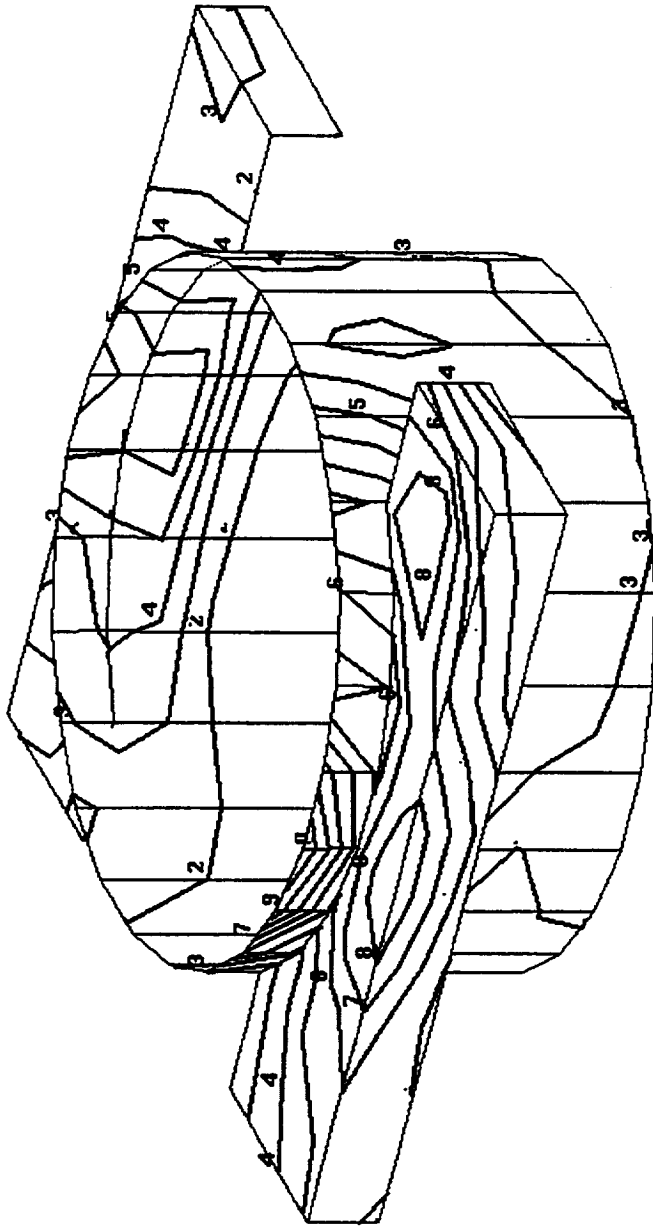
Max ID= 4928

Contour_0:

Stress Tensor

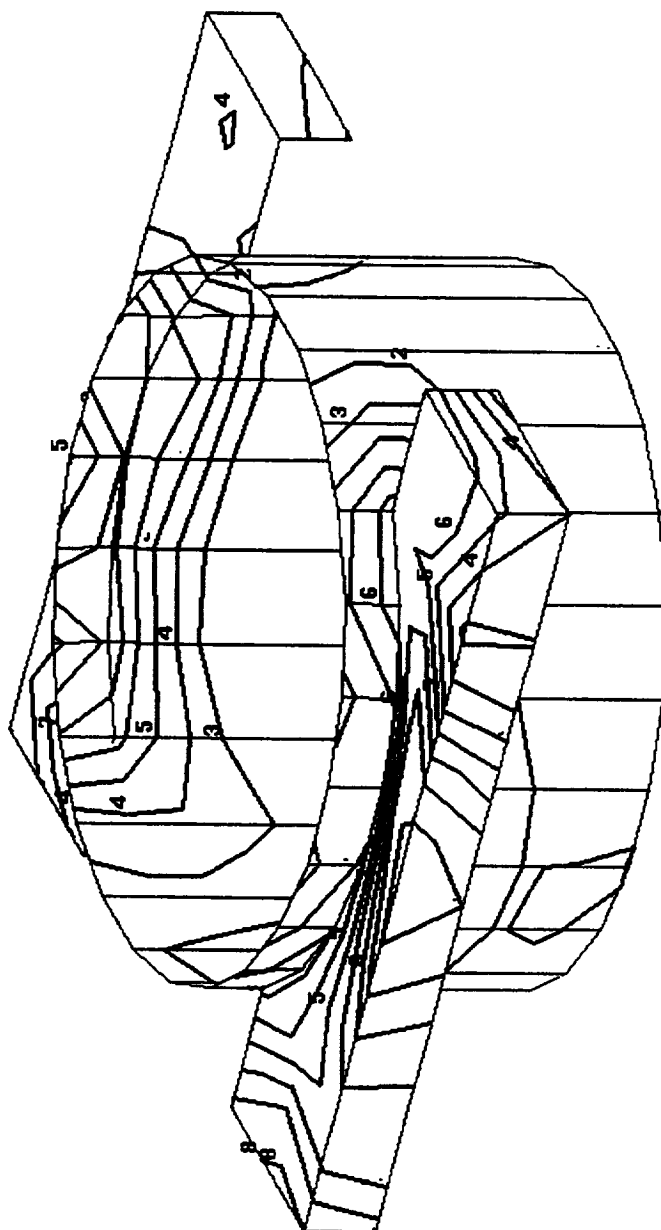
Von Mises
At 22

Design_0y=-20.6_0x=21.2
Static Subcase



Metsat AMSU-A1

Upper Warmload w/Supports



Time: 11:03:51
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.712E+03
—	9	0.634E+03
—	8	0.555E+03
—	7	0.477E+03
—	6	0.398E+03
—	5	0.320E+03
—	4	0.241E+03
—	3	0.163E+03
—	2	0.843E+02
—	1	0.579E+01

Min = 5.795503E+00

Max = 7.907050E+02

Min ID= 5368

Max ID= 2965

Contour_7:

Stress Tensor

Von Mises

At Z1

Design_0y=-20.6_0x=21.2
Static Subcase

Time: 11:04:26
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.668E+03
—	9	0.595E+03
—	8	0.521E+03
—	7	0.447E+03
—	6	0.374E+03
—	5	0.300E+03
—	4	0.227E+03
—	3	0.153E+03
—	2	0.796E+02
—	1	0.607E+01

Min = 6.075047E+00
Max = 7.417132E+02

Min ID= 5382

Max ID= 2961

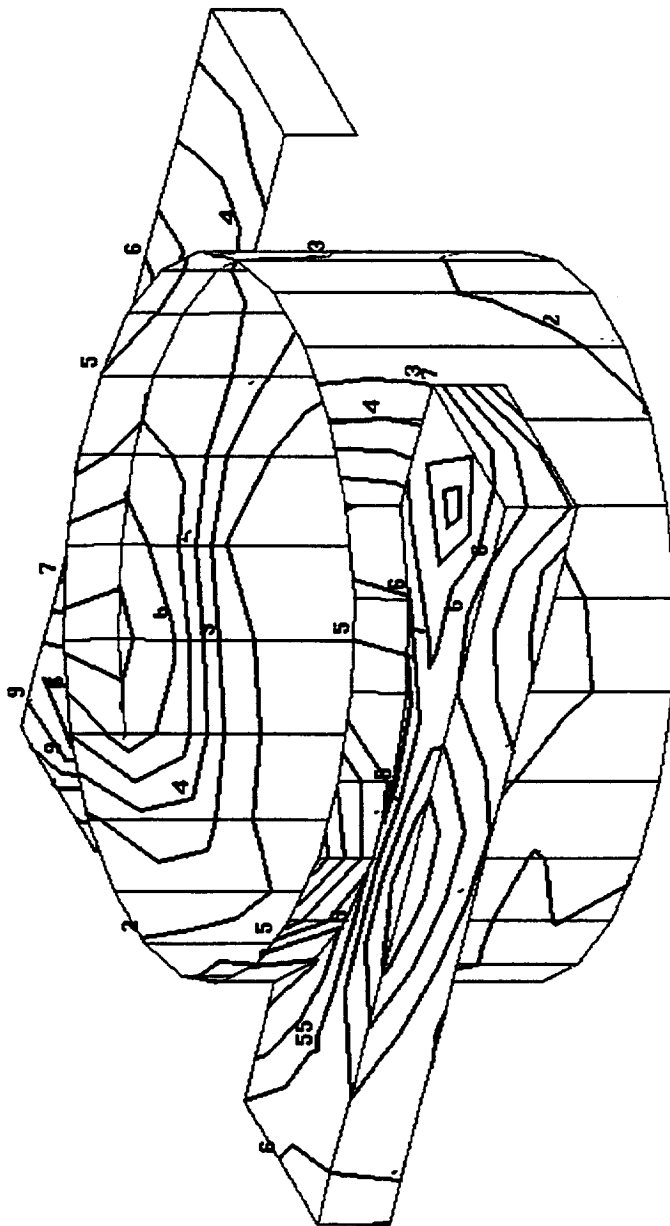
Contour_8:

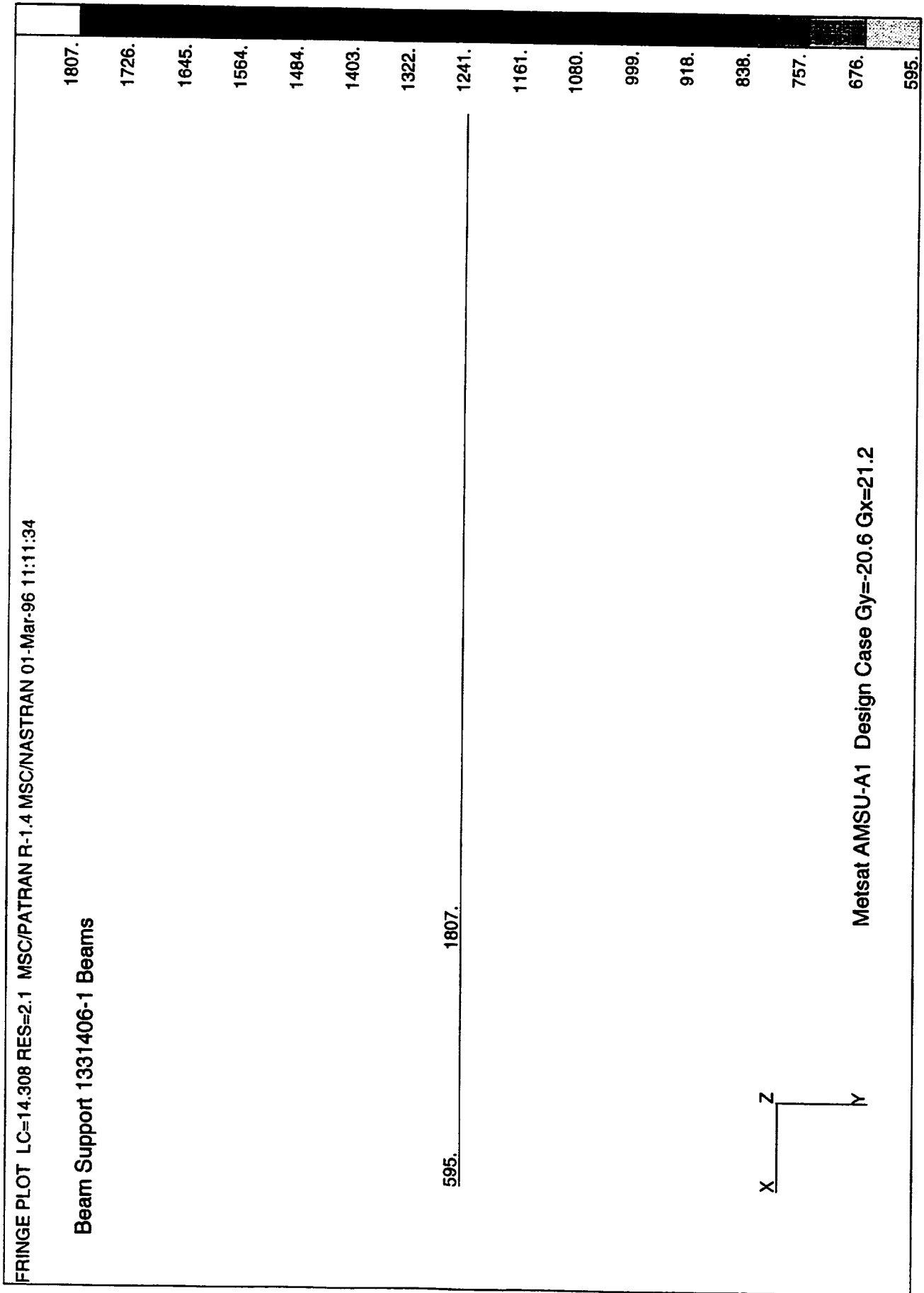
Stress Tensor

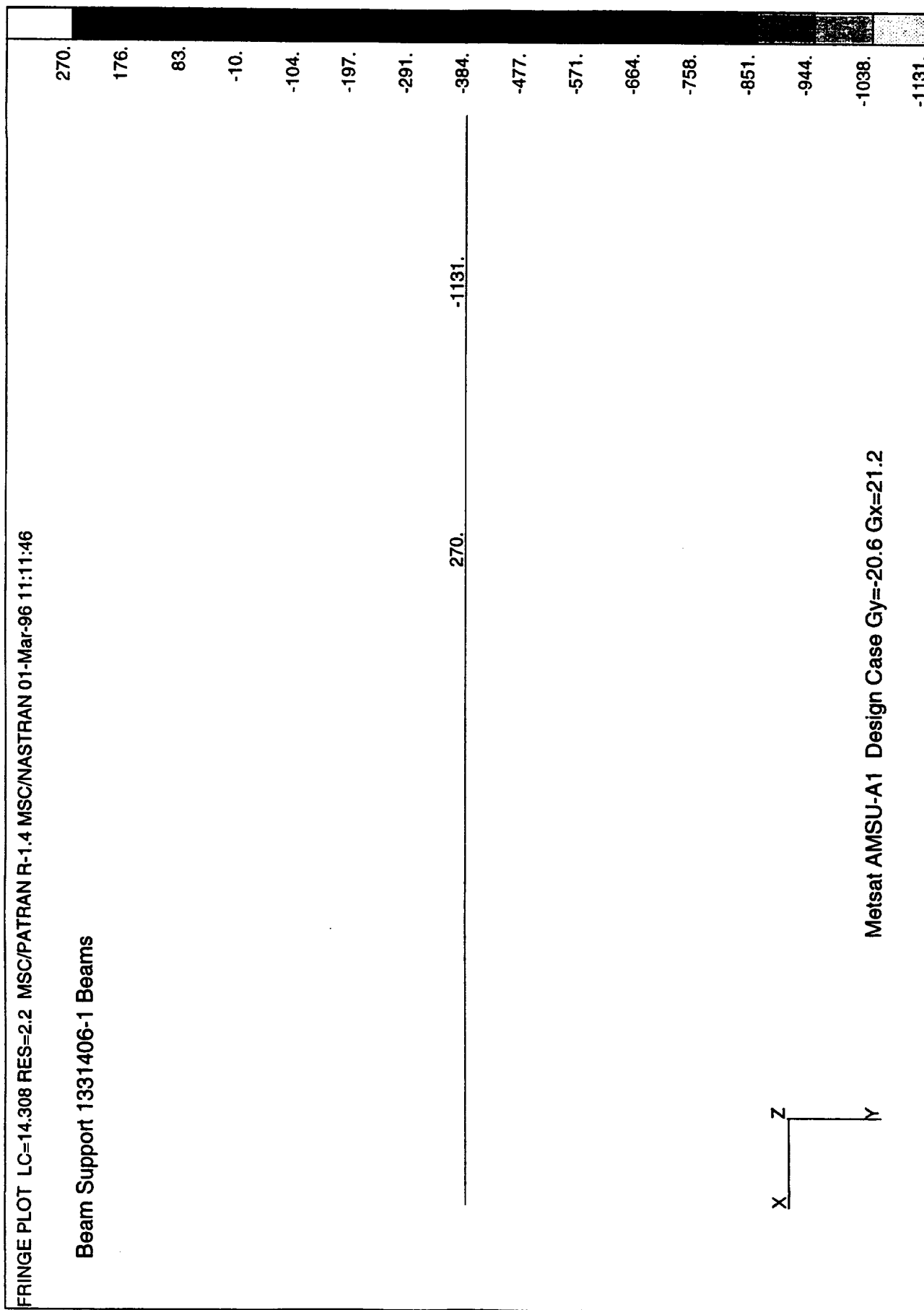
Von Mises
At 22

Design_Qy=-20.6_Qx=21.2
Static Subcase

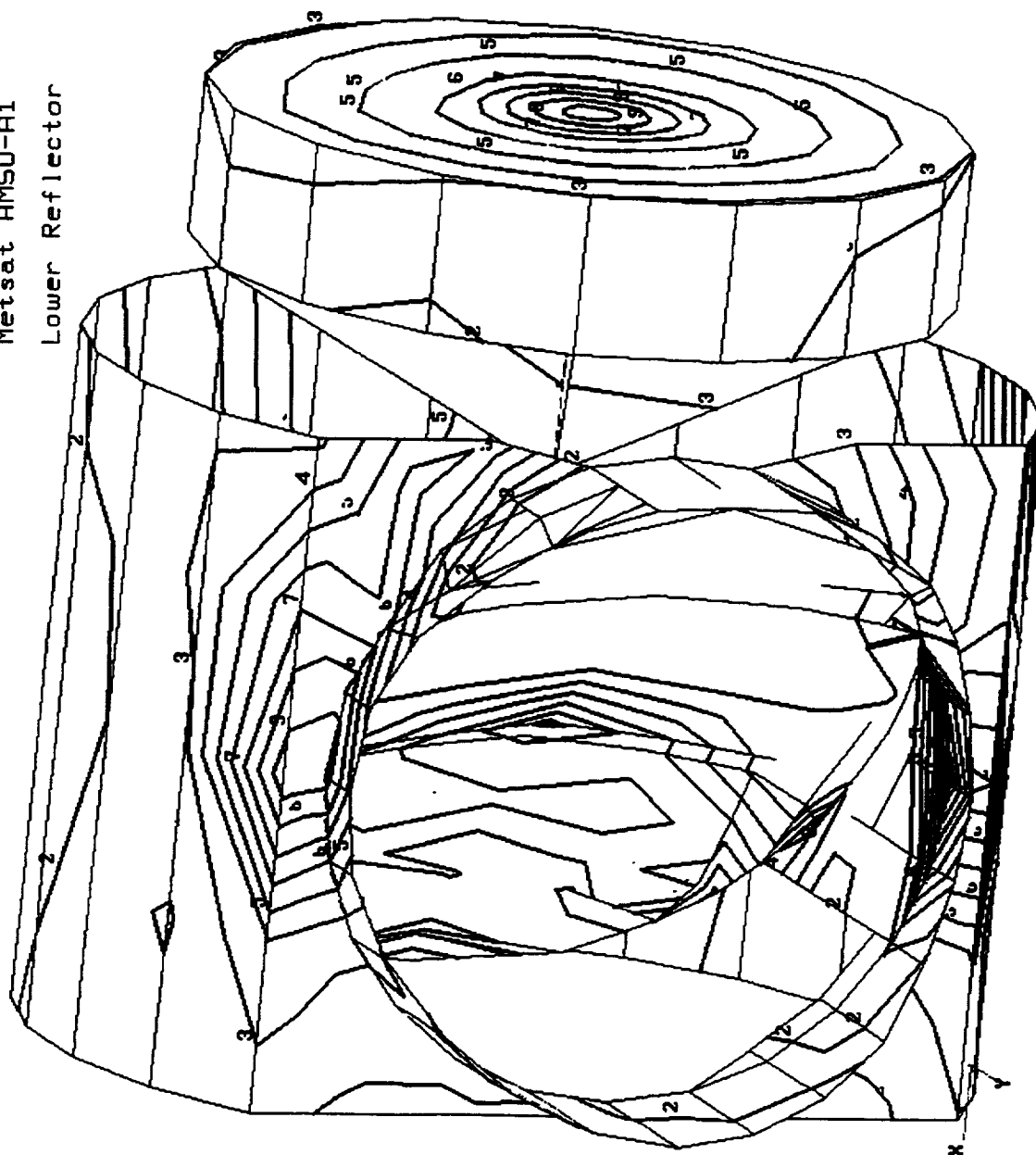
Metsat AMSU-A1
Upper Warmload w/Supports







Metsat AMSU-A1
Lower Reflector



Time: 11:43:00
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.610E+03
9	0.544E+03
8	0.477E+03
7	0.411E+03
6	0.344E+03
5	0.277E+03
4	0.211E+03
3	0.144E+03
2	0.777E+02
1	0.112E+02

Min = 1.118322E+01

Max = 6.767339E+02

Min ID= 4108

Max ID= 4662

Contour_7:

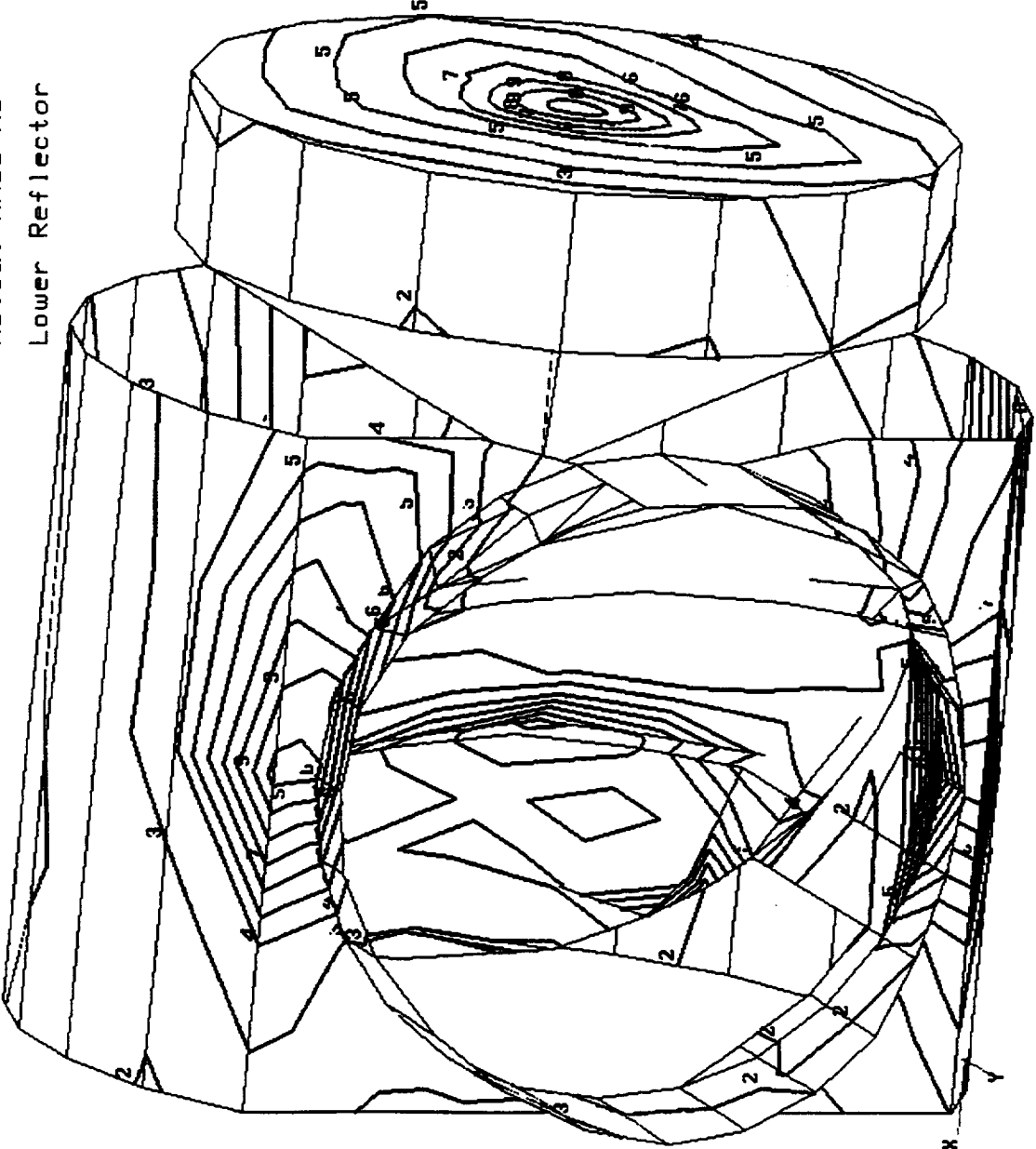
Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0x=21.2
Static Subcase

Time: 11:42:27
Date: 02/29/96

Metsat AMSU-A1
Lower Reflector



Contour
Node Scalar1

Color Index

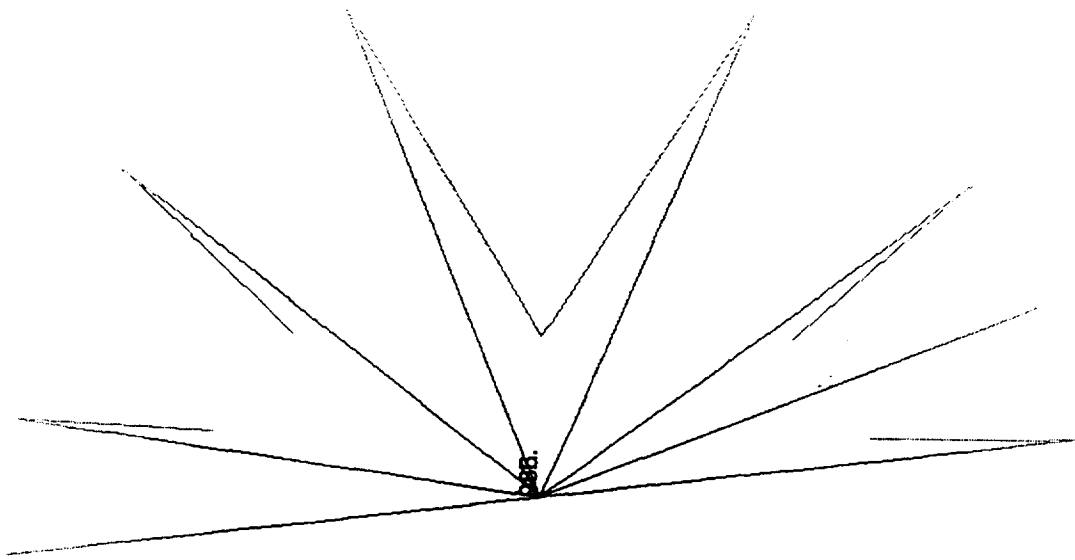
—	0	0.591E+03
—	9	0.527E+03
—	8	0.462E+03
—	7	0.398E+03
—	6	0.333E+03
—	5	0.269E+03
—	4	0.204E+03
—	3	0.140E+03
—	2	0.753E+02
—	1	0.108E+02

Min = 1.082108E+01
Max = 6.556890E+02
Min ID= 4112
Max ID= 4662
Contour_8:
Stress Tensor

Von Mises
At 22

Design_By=-20.6_Gx=21.2
Static Subcase

FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:01:37
Lower Reflector Beams



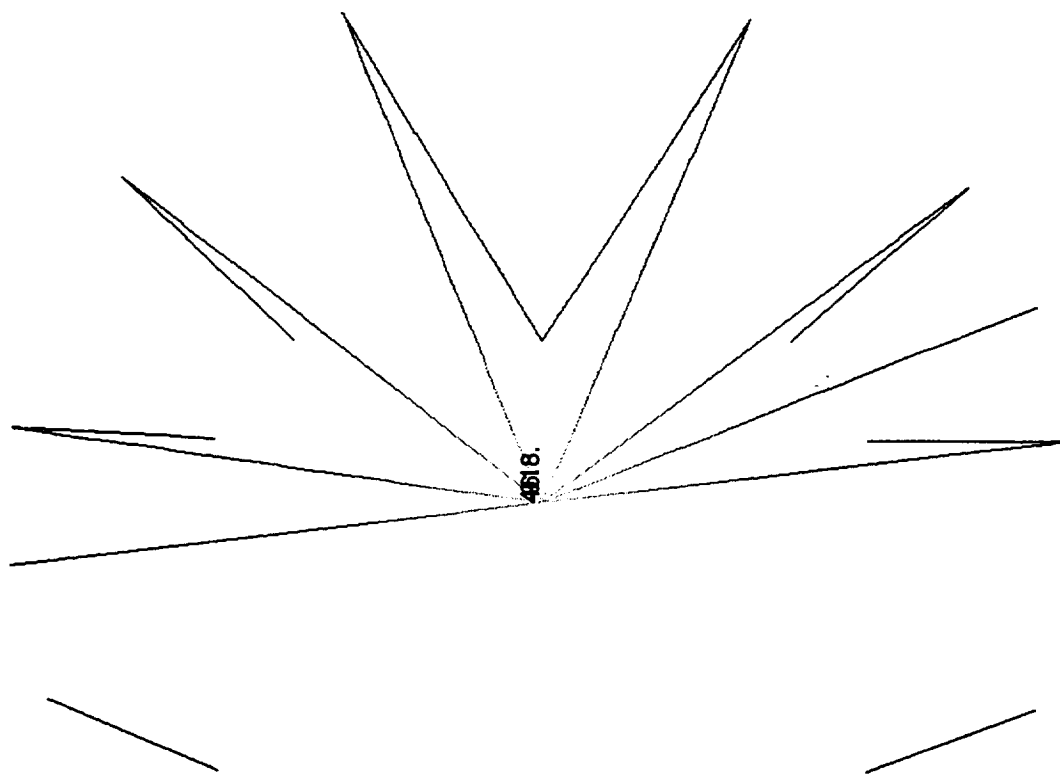
986.
918.
849.
781.
712.
644.
575.
507.
438.
370.
302.
233.
165.
96.
28.
-41.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:01:52

Lower Reflector Beams

46.
-19.
-83.
-147.
-211.
-276.
-340.
-404.
-468.
-533.
-597.
-661.
-725.
-790.
-854.
-918.



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 13:27:07
Date: 02/29/96

Contour
Node Scalar1

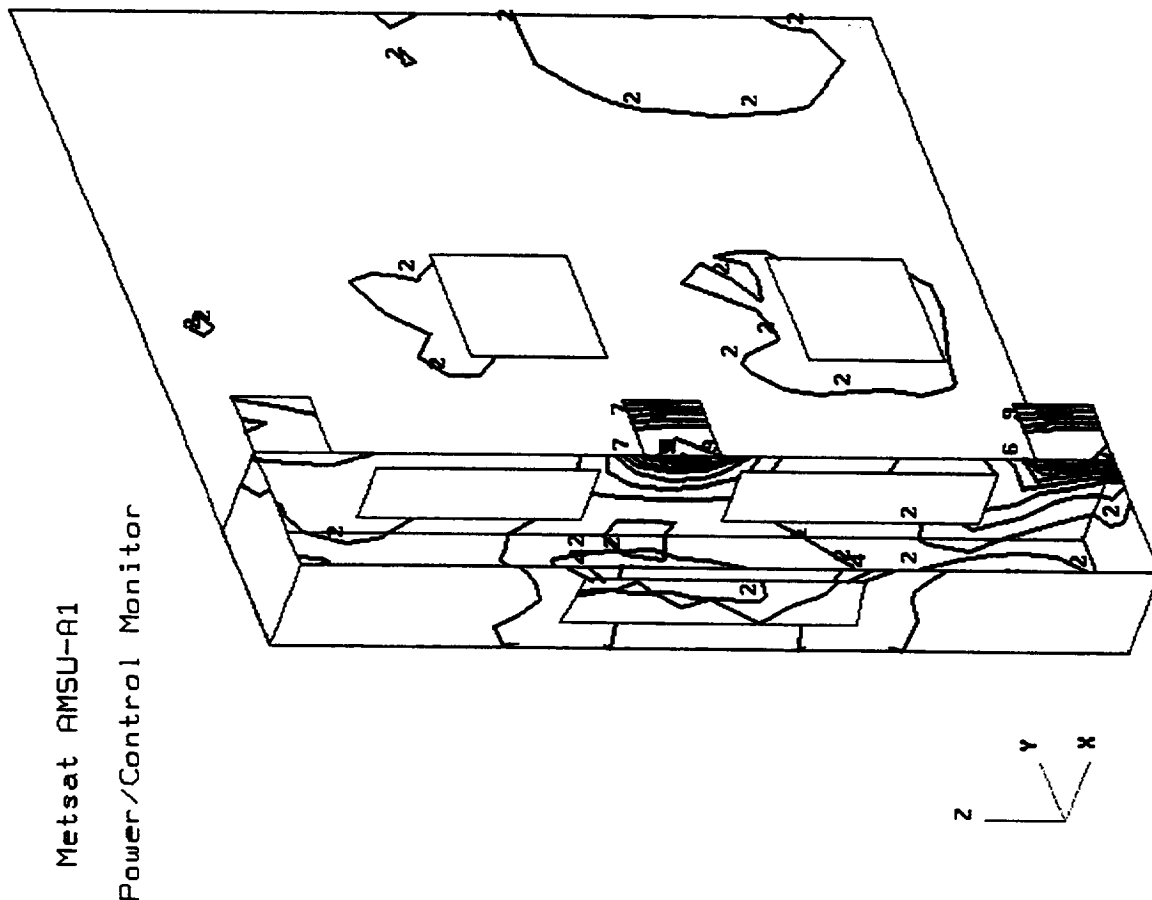
Color Index

0	0.202E+04
9	0.251E+04
8	0.220E+04
7	0.189E+04
6	0.150E+04
5	0.127E+04
4	0.953E+03
3	0.641E+03
2	0.330E+03
1	0.179E+02

Min = 1.794564E+01
Max = 3.135598E+03
Min ID= 5601
Max ID= 6334
Contour_7:
Stress Tensor

Von Mises
At Z1

Design_Gy=-20.6_Gx=21.2
Static Subcase



Time: 13:27:40
Date: 02/29/96

Metsat AMSU-A1

Power/Control Monitor

Contour
Node Scalar1

Color Index

0	0.206E+04
9	0.254E+04
8	0.223E+04
7	0.191E+04
6	0.159E+04
5	0.128E+04
4	0.964E+03
3	0.648E+03
2	0.333E+03
1	0.169E+02

Min = 1.693329E+01

Max = 3.172652E+03

Min ID= 5646

Max ID= 6338

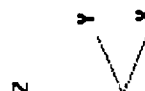
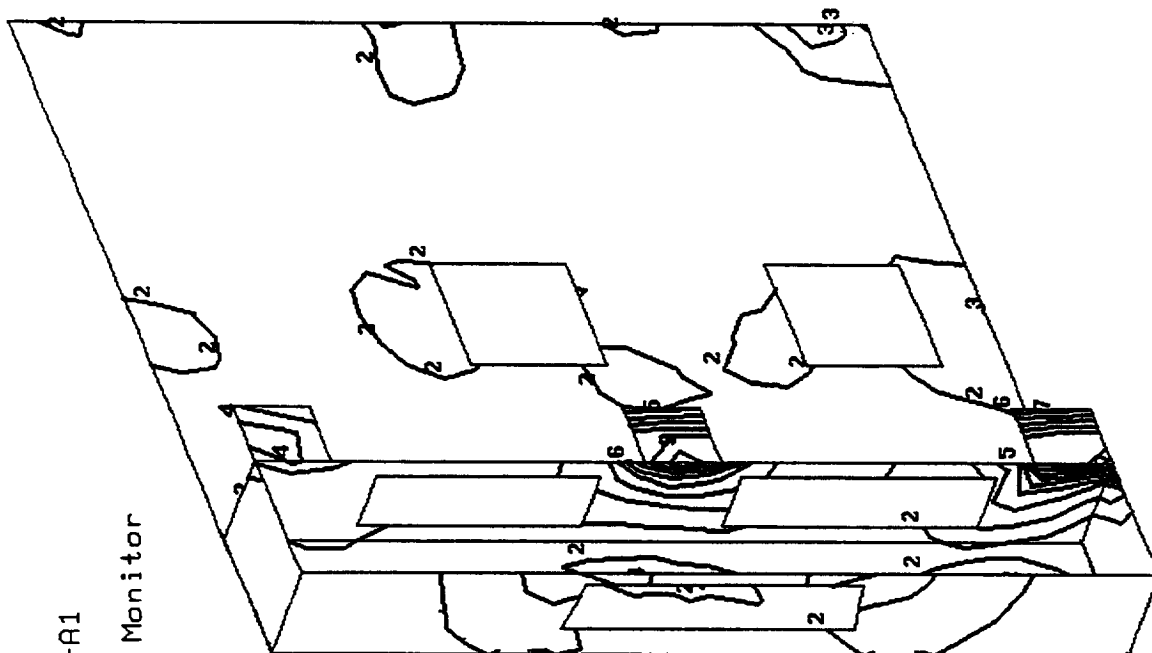
Contour_8:

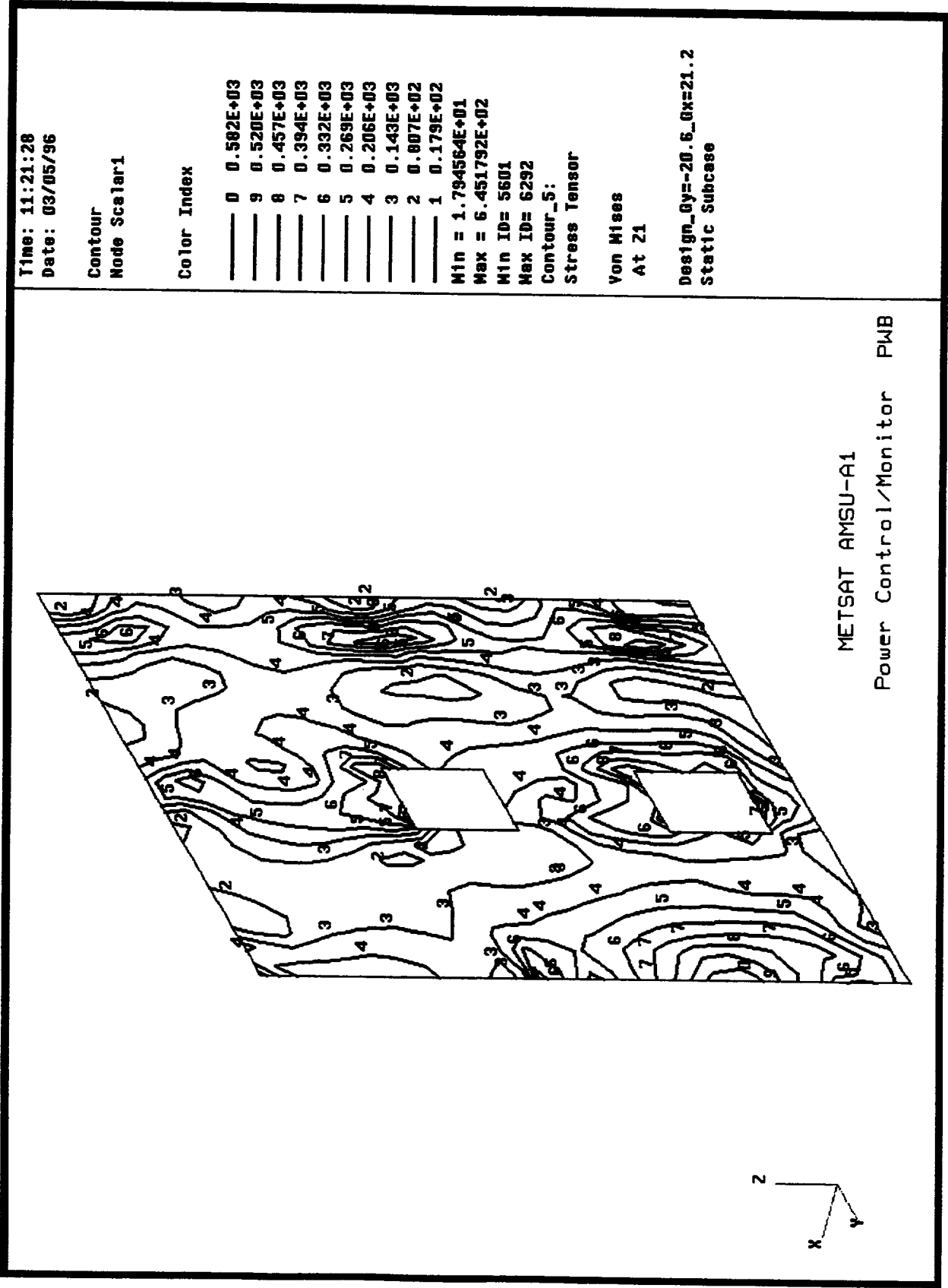
Stress Tensor

Von Mises

At 22

Design_Qy=-20.6_Qx=21.2
Static Subcase





Time: 11:21:00
Date: 03/05/96

Contour
Node Scalar1

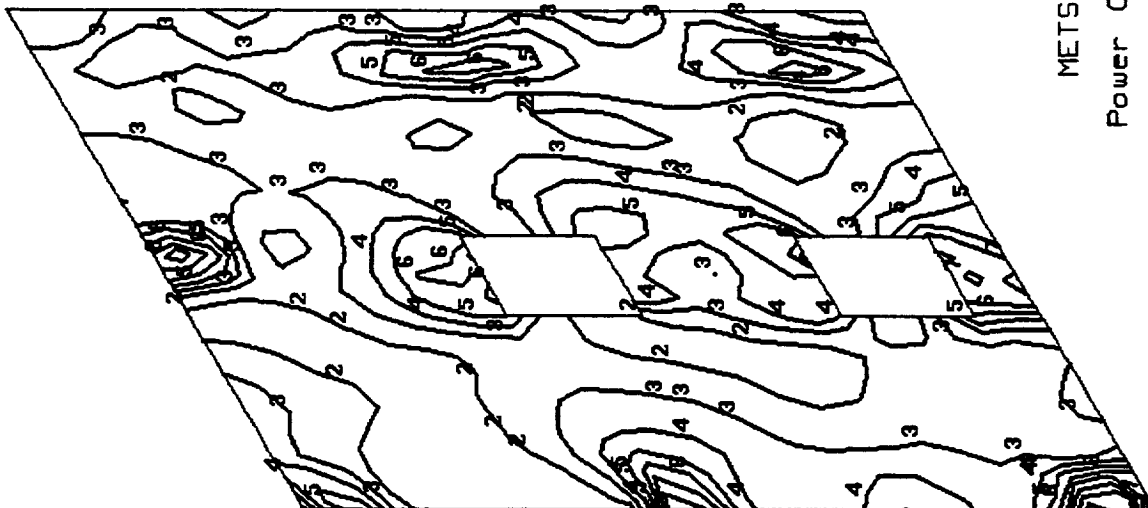
Color Index

0	0.774E+03
9	0.690E+03
8	0.606E+03
7	0.522E+03
6	0.438E+03
5	0.354E+03
4	0.269E+03
3	0.185E+03
2	0.101E+03
1	0.169E+02

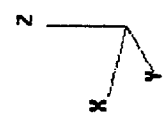
Min = 1.693329E+01
Max = 8.584095E+02
Min ID= 5646
Max ID= 6313
Contour_6:
Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0x=21.2
Static Subcase

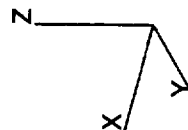


METSAT AMSU-A1
Power Control/Monitor PWB



FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:09:57

Power Control/Module Standoff Beams

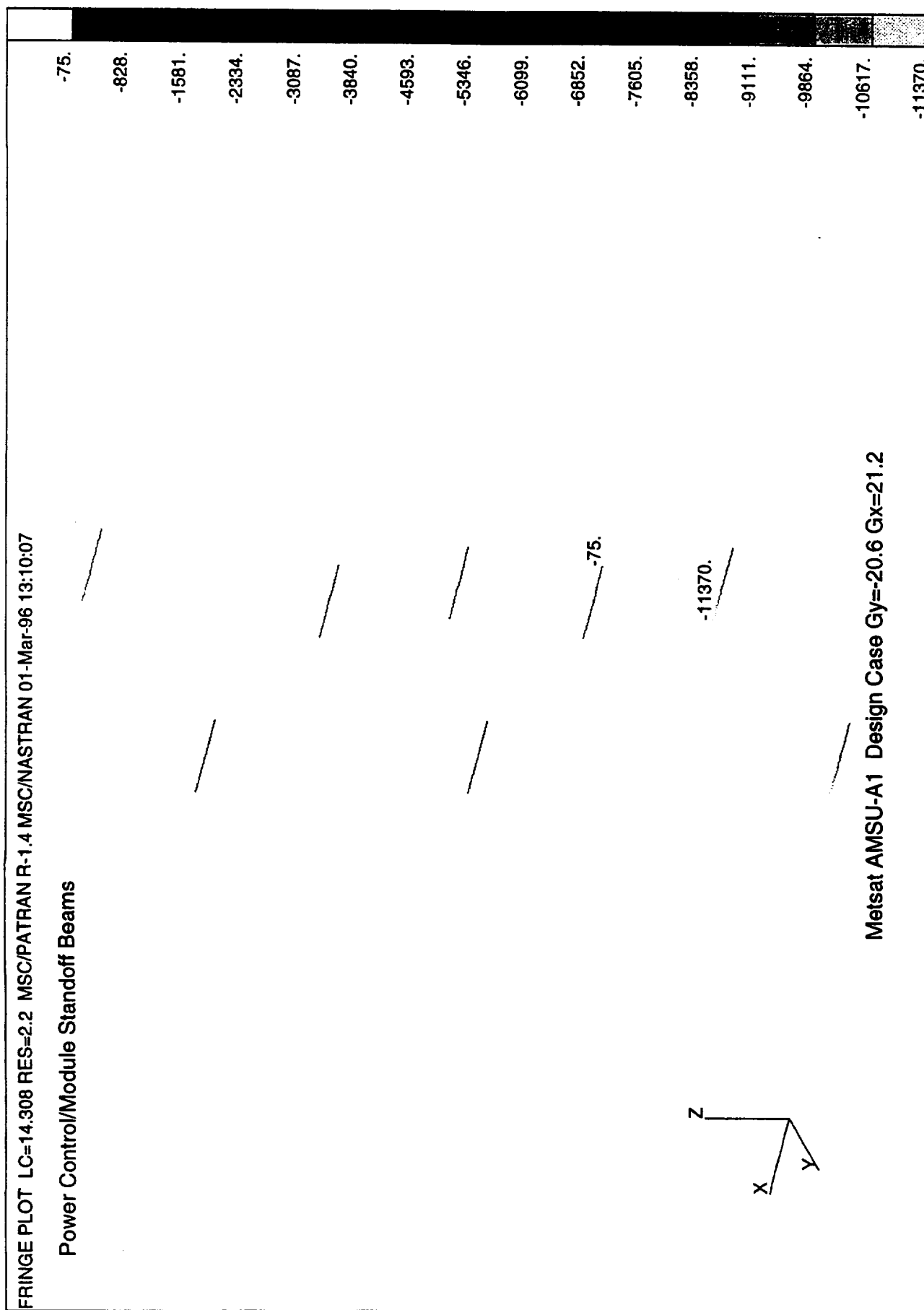


11270.
10515.
9761.
9006.
8251.
7496.
6741.
5986.
5232.
4477.
3722.
2967.
2212.
1458.
703.
-52.

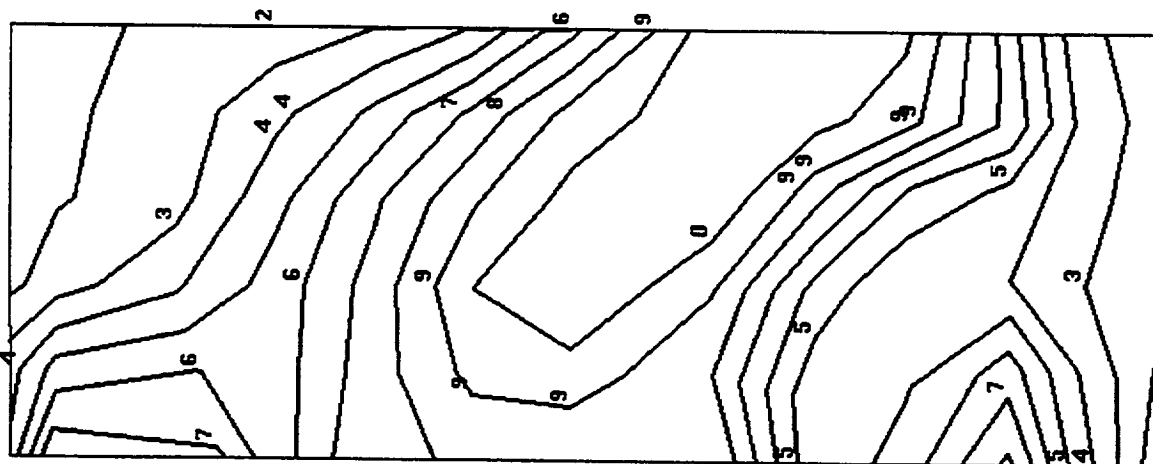
-52.

11270.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2



Metsat AMSU-A1
Radiator Panel



Z
Y

Time: 15:25:27
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.235E+04
1	0.210E+04
2	0.184E+04
3	0.158E+04
4	0.133E+04
5	0.107E+04
6	0.815E+03
7	0.558E+03
8	0.302E+03
9	0.457E+02

Min = 4.566050E+01

Max = 2.609569E+03

Min ID= 10963

Max ID= 10918

Contour_7:

Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_Gx=21.2
Static Subcase

Time: 15:25:51
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.289E+04
—	9	0.257E+04
—	8	0.226E+04
—	7	0.195E+04
—	6	0.164E+04
—	5	0.133E+04
—	4	0.101E+04
—	3	0.703E+03
—	2	0.391E+03
—	1	0.786E+02

Min = 7.863512E+01
Max = 3.198421E+03

Min ID= 10973

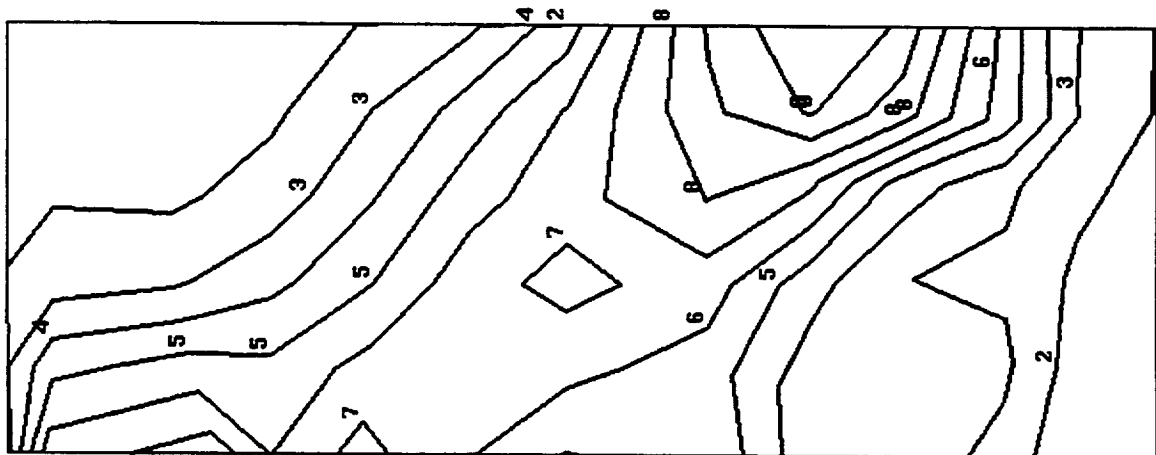
Max ID= 10899

Contour_8:

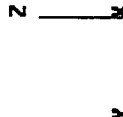
Stress Tensor

Von Mises
At 22

Design_Qy=-20.6_0x=21.2
Static Subcase



Metsat AMSU-A1
Radiator Panel



Metsat AMSU-A1
Sidemount

Time: 11:20:58
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.125E+05
9	0.112E+05
8	0.977E+04
7	0.837E+04
6	0.698E+04
5	0.559E+04
4	0.420E+04
3	0.281E+04
2	0.142E+04
1	0.283E+02

Min = 2.827831E+01

Max = 1.393819E+04

Min ID= 8454

Max ID= 8308

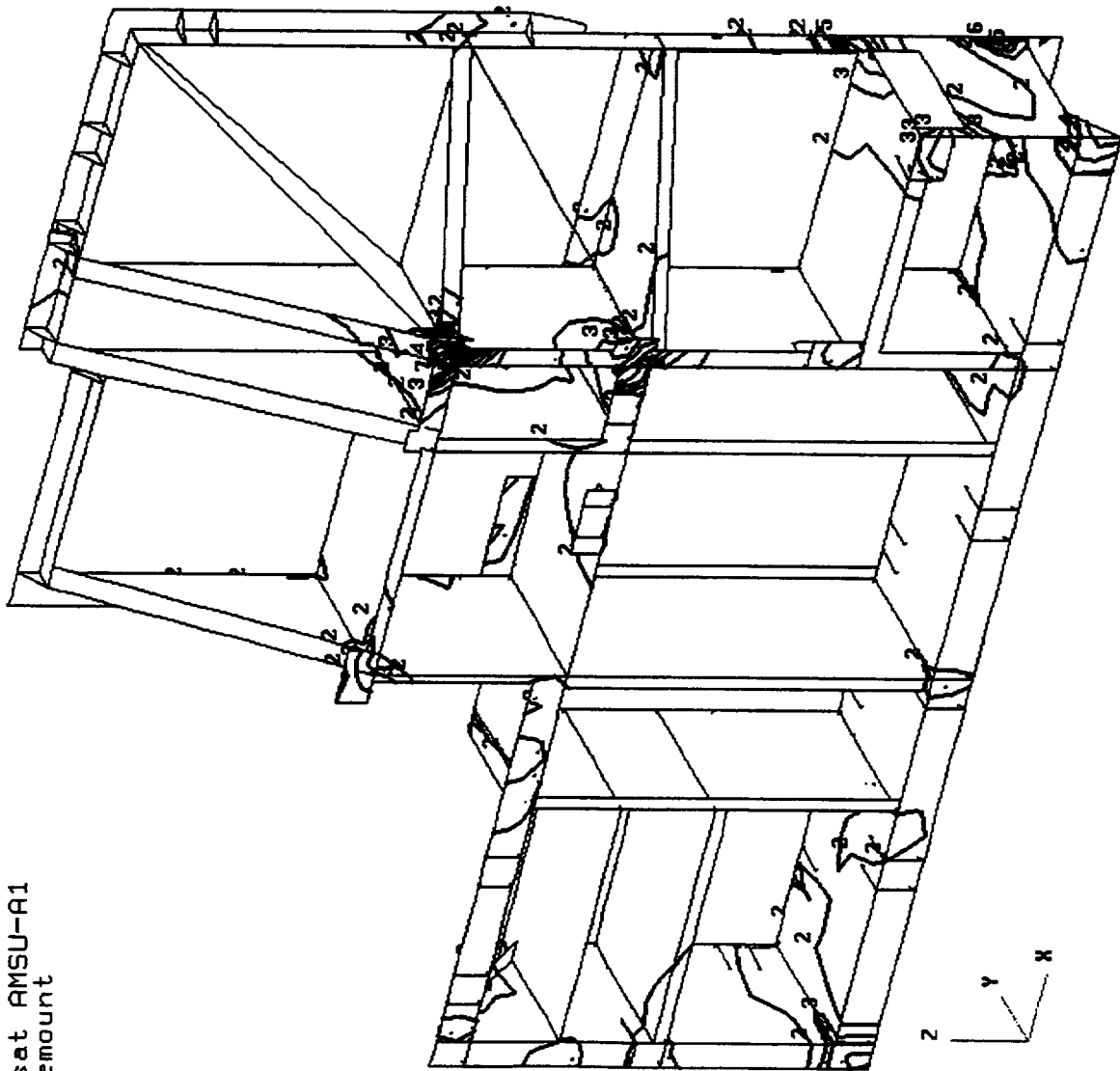
Contour_7:

Stress Tensor

Von Mises

At Z1

Design_Oy=-20.6, Ox=21.2
Static Subcase



Time: 11:20:02
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.152E+05
—	9	0.136E+05
—	8	0.119E+05
—	7	0.102E+05
—	6	0.849E+04
—	5	0.680E+04
—	4	0.511E+04
—	3	0.341E+04
—	2	0.172E+04
—	1	0.336E+02

M1n = 3.359819E+01

Max = 1.694003E+04

M1n ID= 8180

Max ID= 8312

Contour_8:

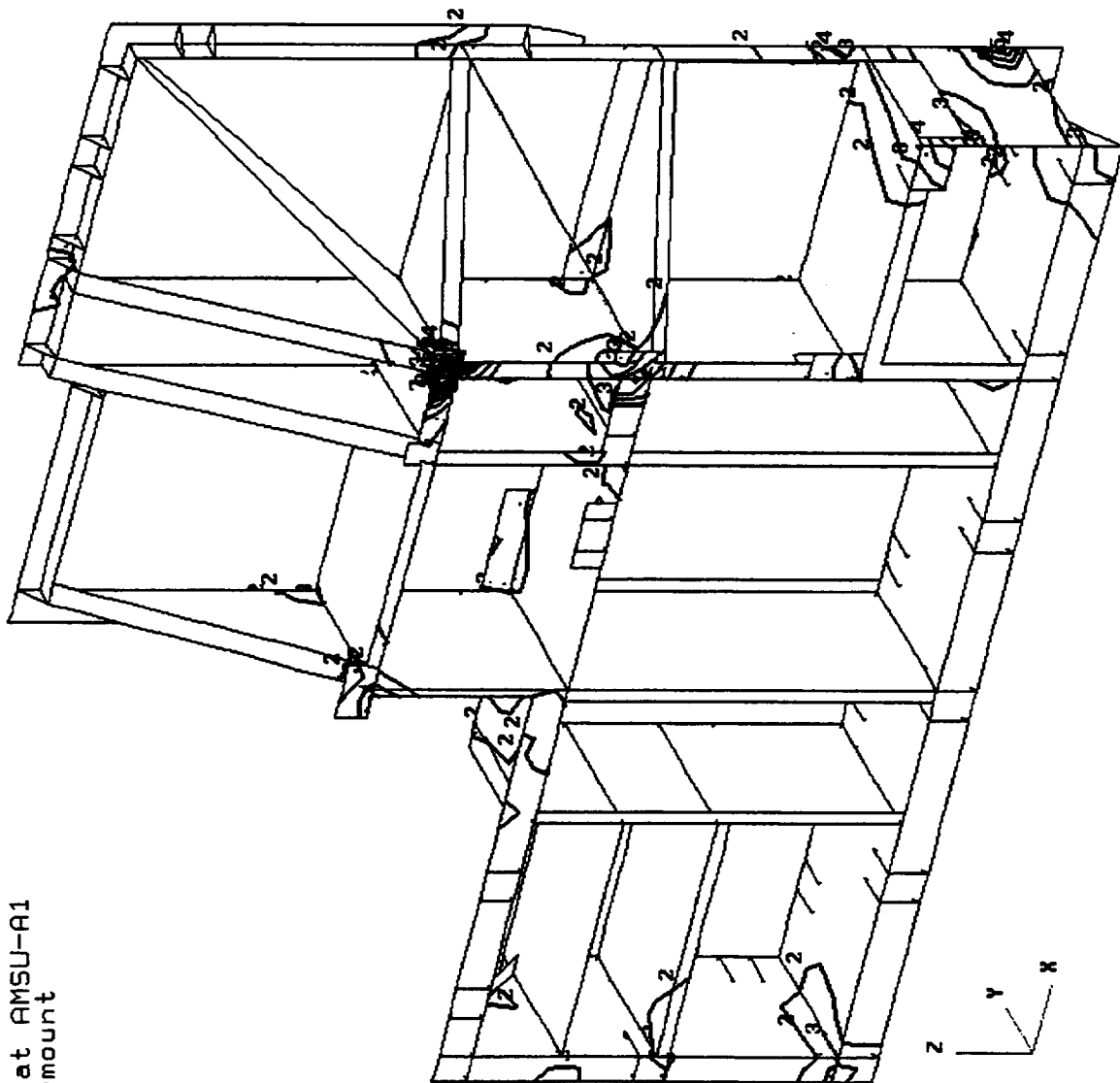
Stress Tensor

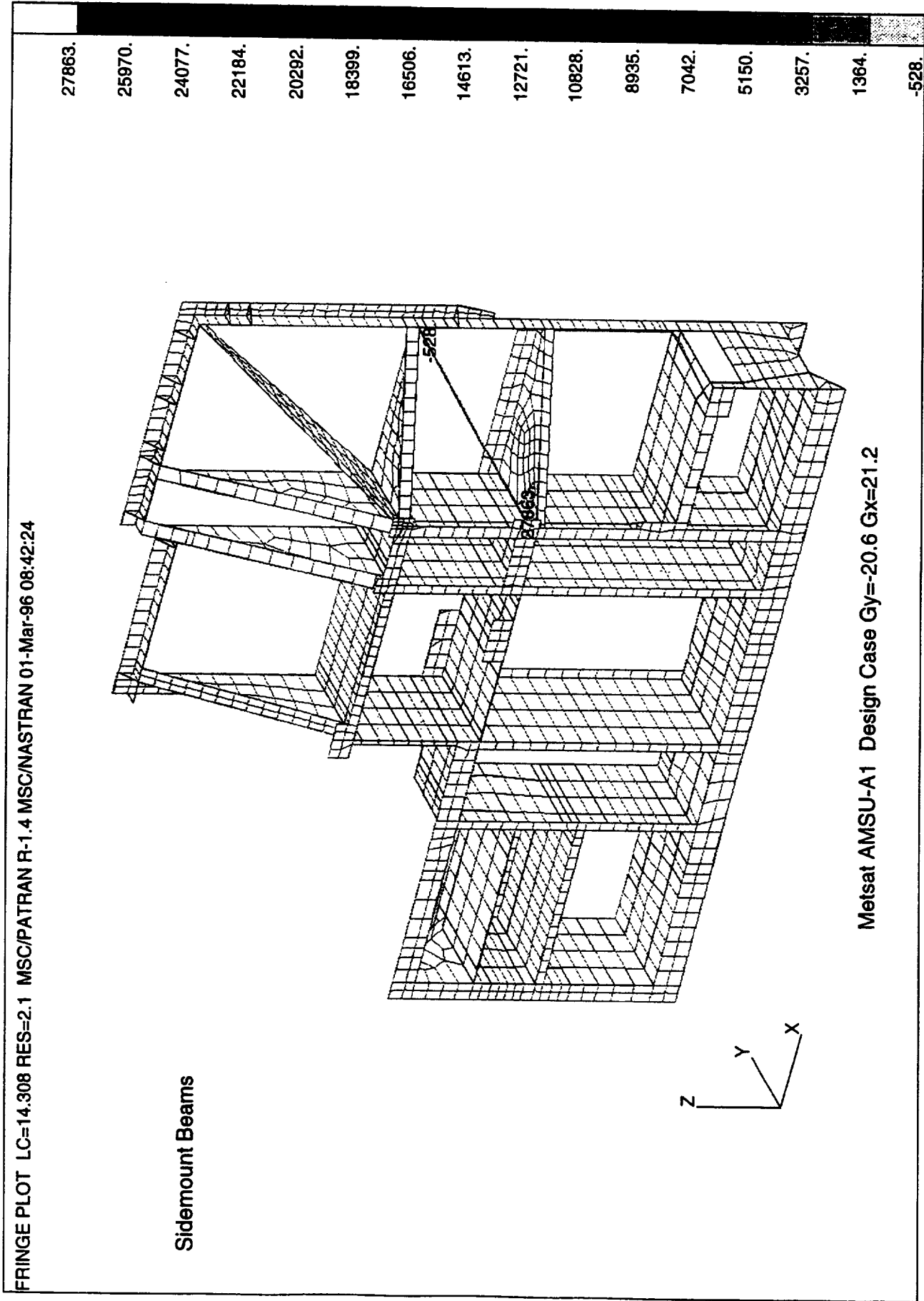
Von Mises

At 22

Design_Gy=-20.6_Gx=21.2
Static Subcase

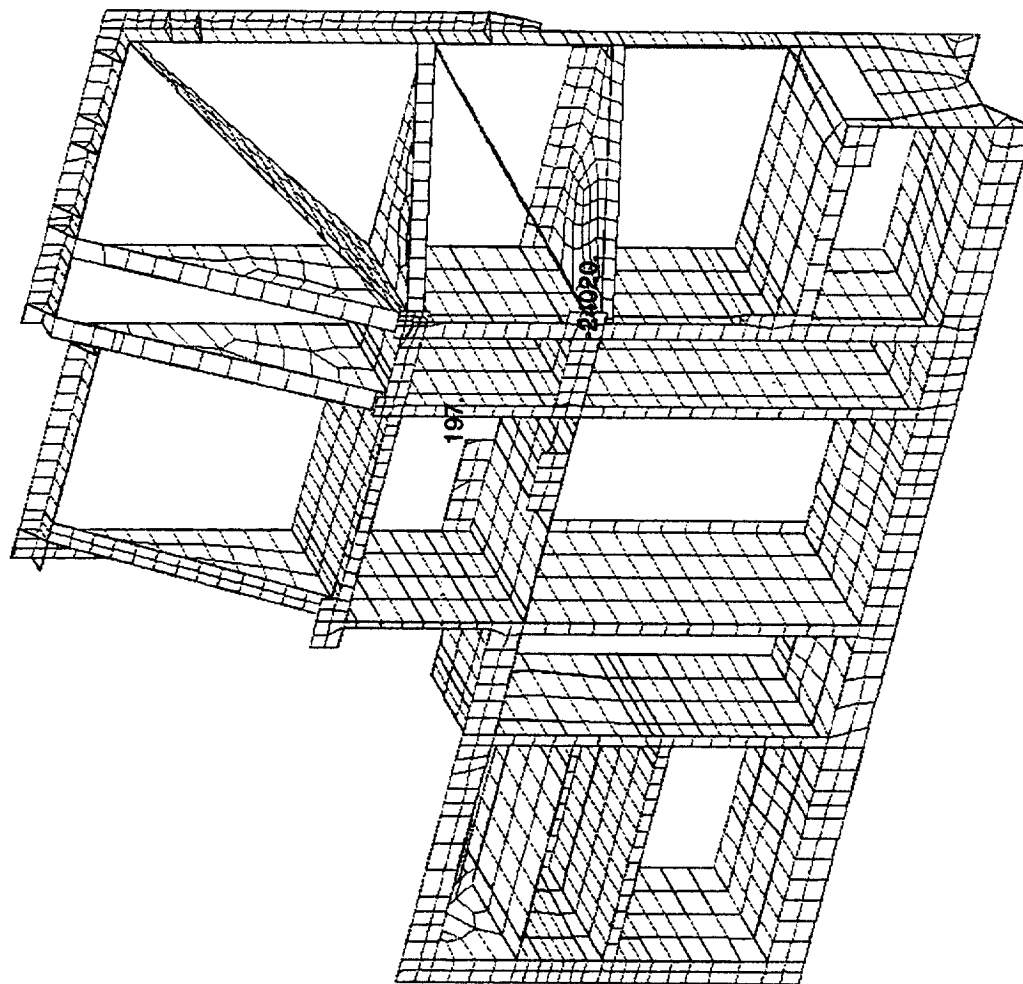
Metsat AMSU-A1
Sidemount



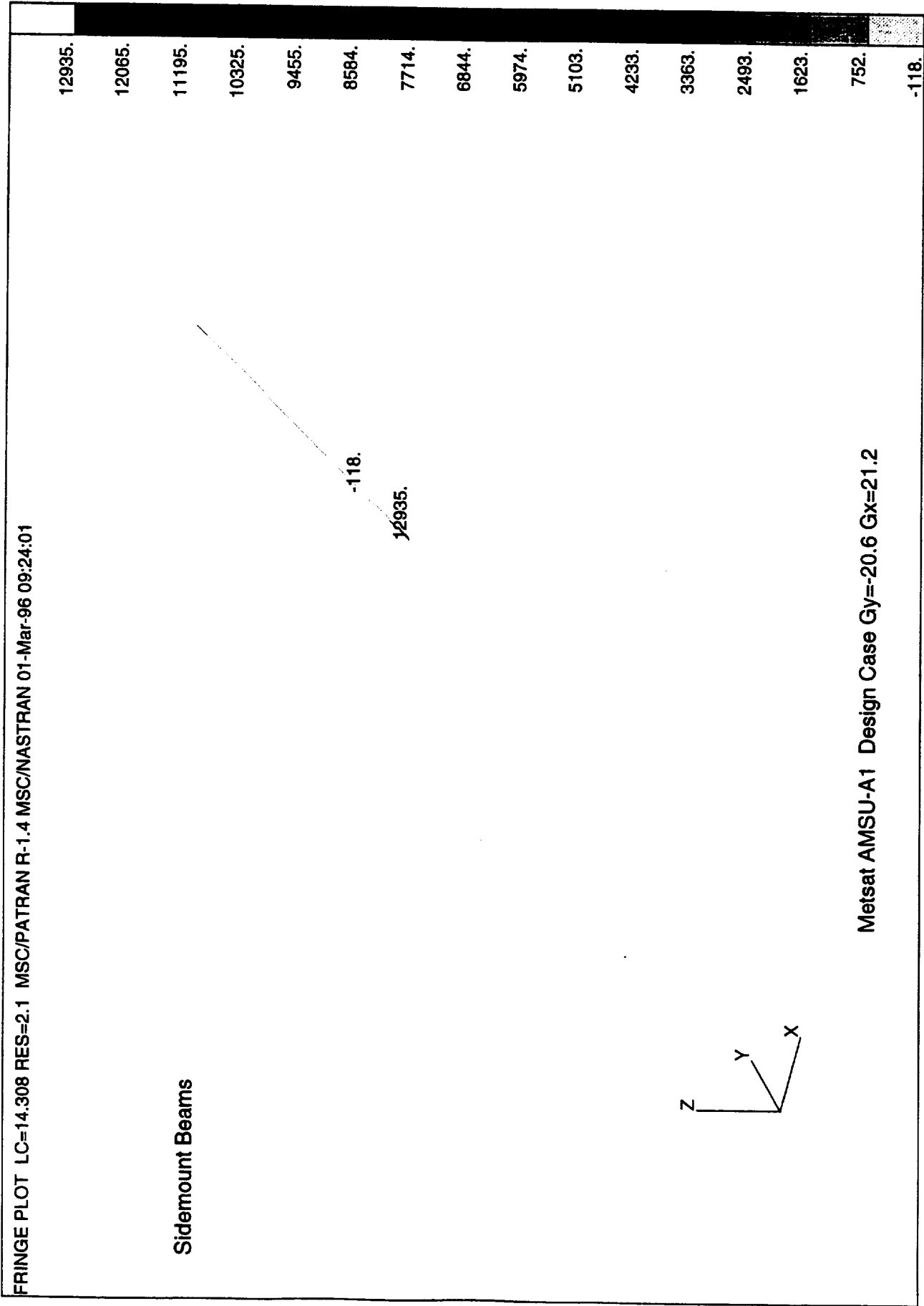


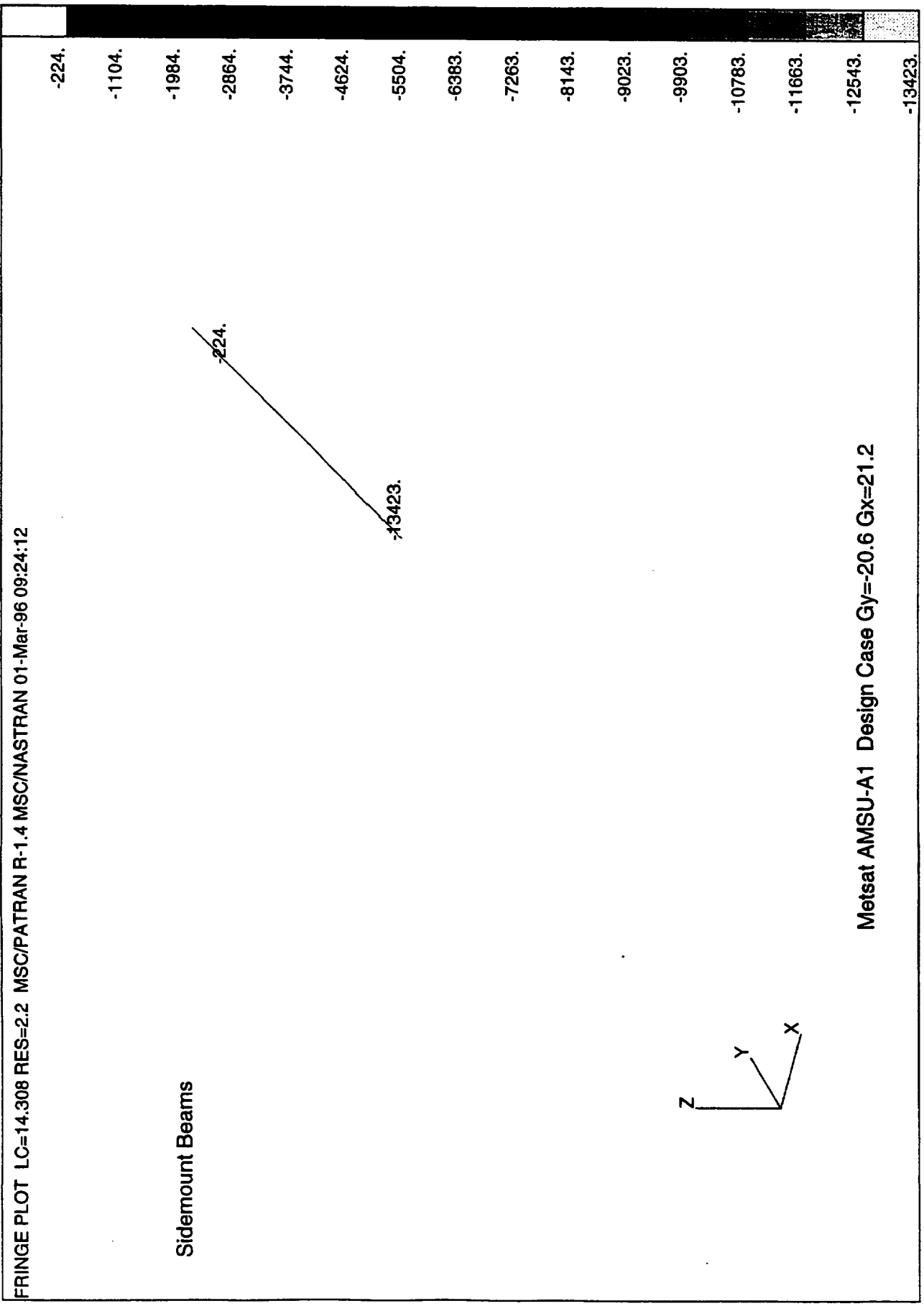
FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 08:42:42

Sidemount Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2





Time: 13:43:15
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.621E+03
1	0.554E+03
2	0.486E+03
3	0.418E+03
4	0.350E+03
5	0.282E+03
6	0.215E+03
7	0.147E+03
8	0.789E+02
9	0.111E+02

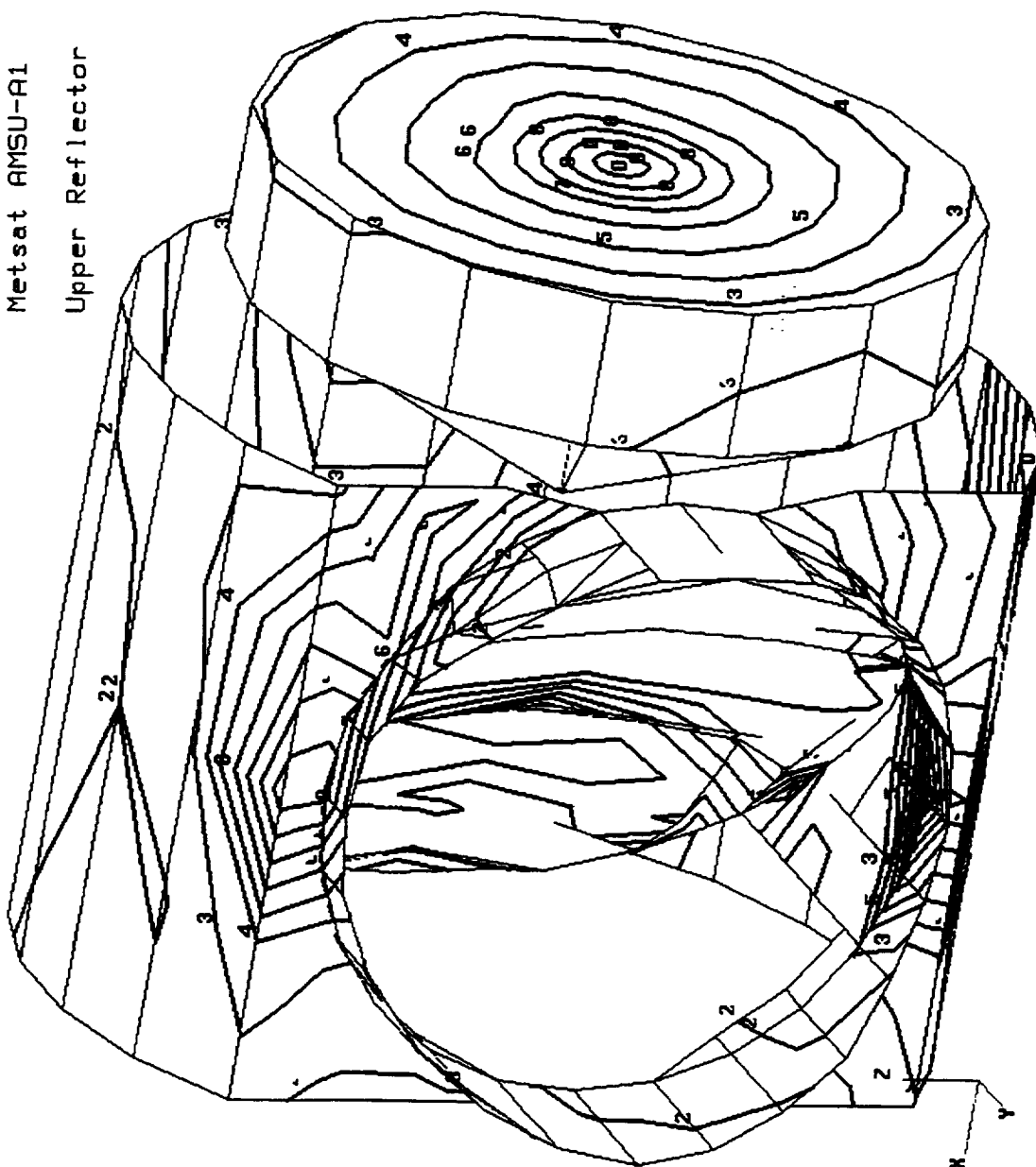
Min = 1.11343E+01
Max = 6.891887E+02
Min ID= 4422
Max ID= 4629
Contour_7:
Stress Tensor

Von Mises
At Z1

Design_Qy=-20.6_Gx=21.2
Static Subcase

Metsat AMSU-A1

Upper Reflector



Time: 13:33:49
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.594E+03
1	0.529E+03
2	0.464E+03
3	0.399E+03
4	0.335E+03
5	0.270E+03
6	0.205E+03
7	0.140E+03
8	0.752E+02
9	0.104E+02

Min = 1.041293E+01
Max = 6.587390E+02

Min ID= 4426

Max ID= 4629

Contour_8:

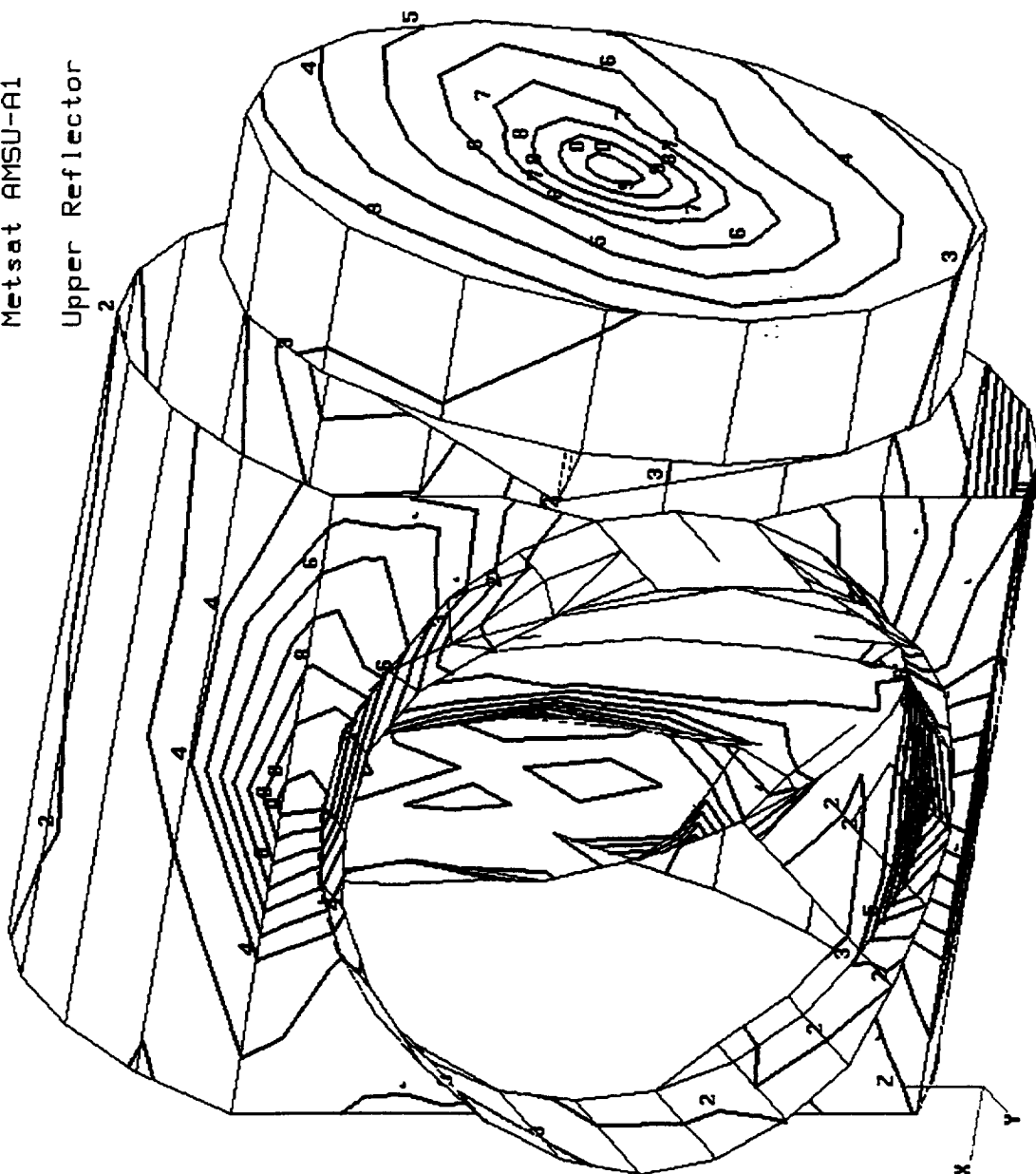
Stress Tensor

Von Mises
At 22

Design_Qy=20.6_Qx=21.2
Static Subcase

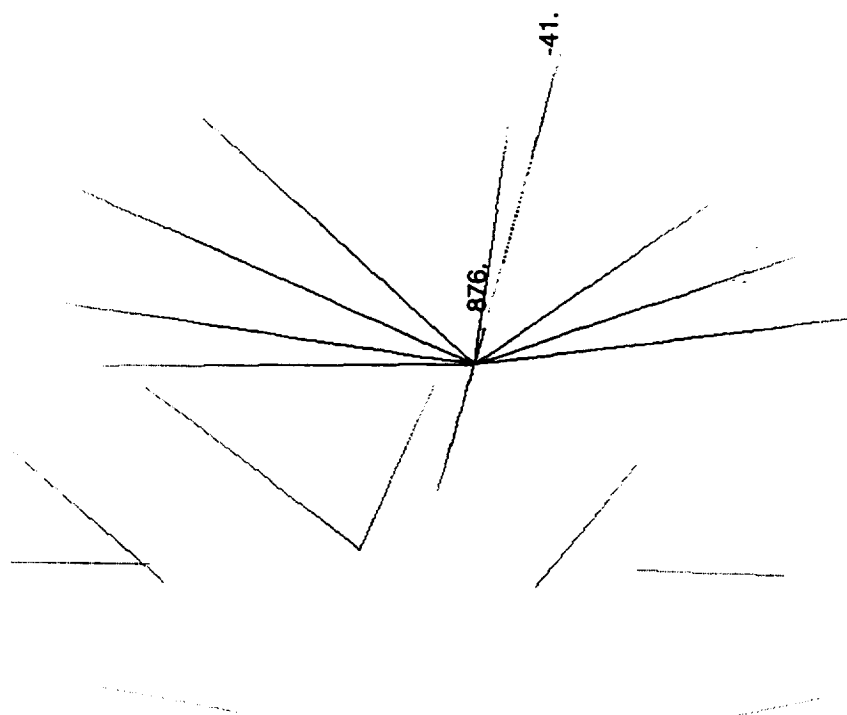
Metsat AMSU-A1

Upper Reflector



FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:07:37

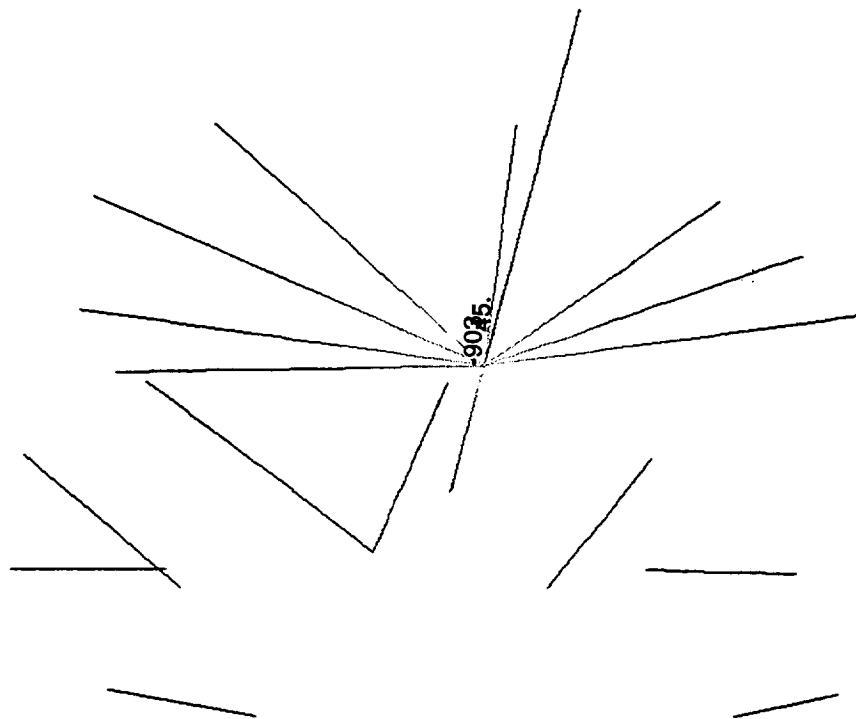
Upper Reflector Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

FRINGE PLOT LC=14.308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:07:44

Upper Reflector Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

Time: 16:01:16
Date: 02/29/96

Contour
Node Scalar1

Color Index

---	0	0.180E+04
---	9	0.160E+04
---	8	0.141E+04
---	7	0.122E+04
---	6	0.102E+04
---	5	0.828E+03
---	4	0.634E+03
---	3	0.440E+03
---	2	0.246E+03
---	1	0.525E+02

Min = 5.248903E+01

Max = 1.990082E+03

Min ID= 1191

Max ID= 1094

Contour_9:

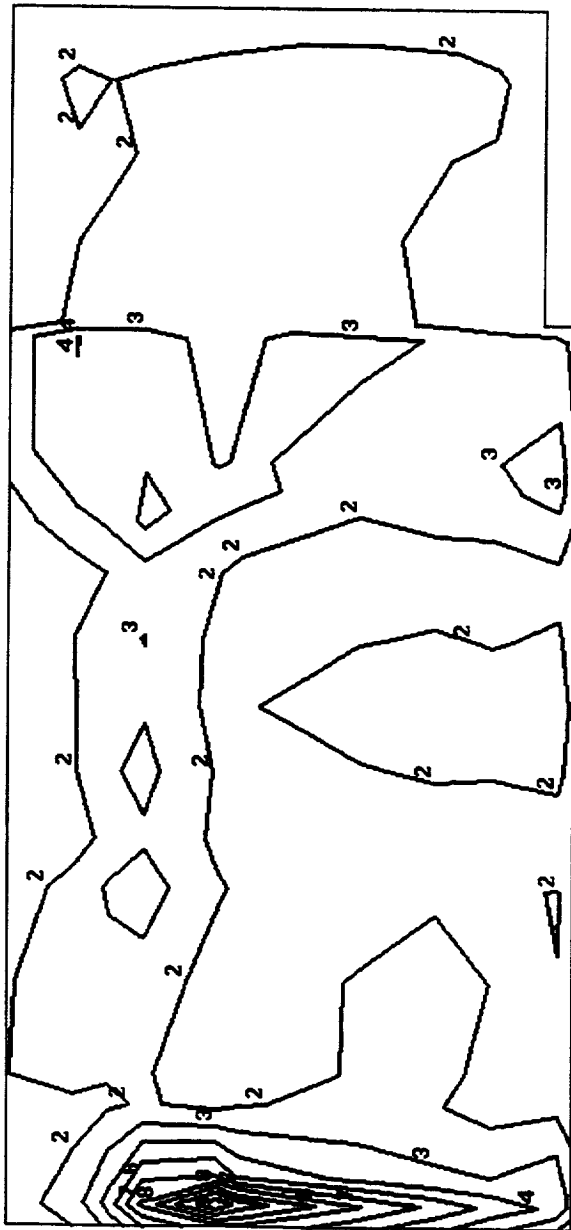
Stress Tensor

Von Mises

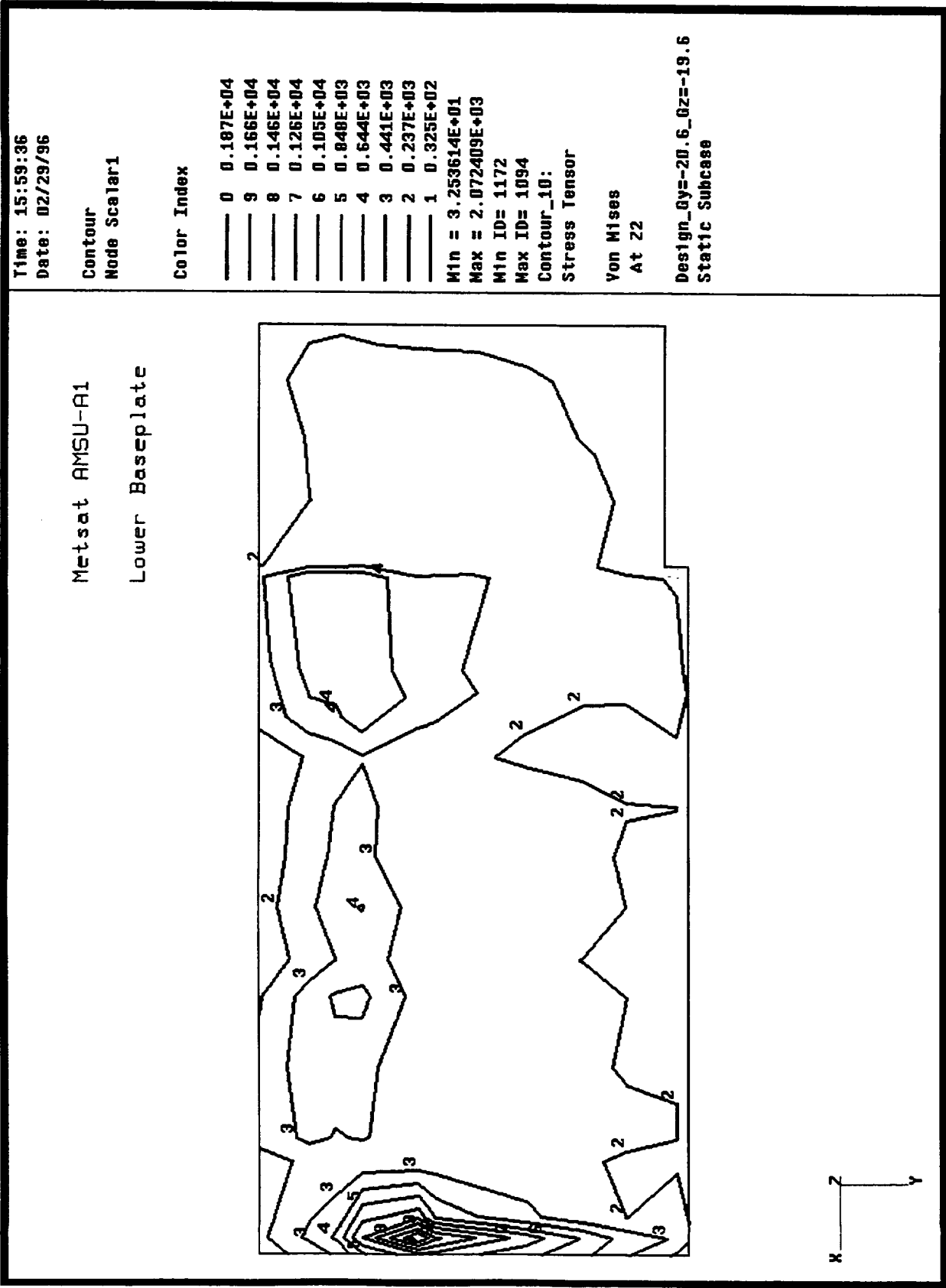
At Z1

Design_Oy=-20.6_Oz=-19.6
Static Subcase

Metsat AMSU-A1
Lower Baseplate

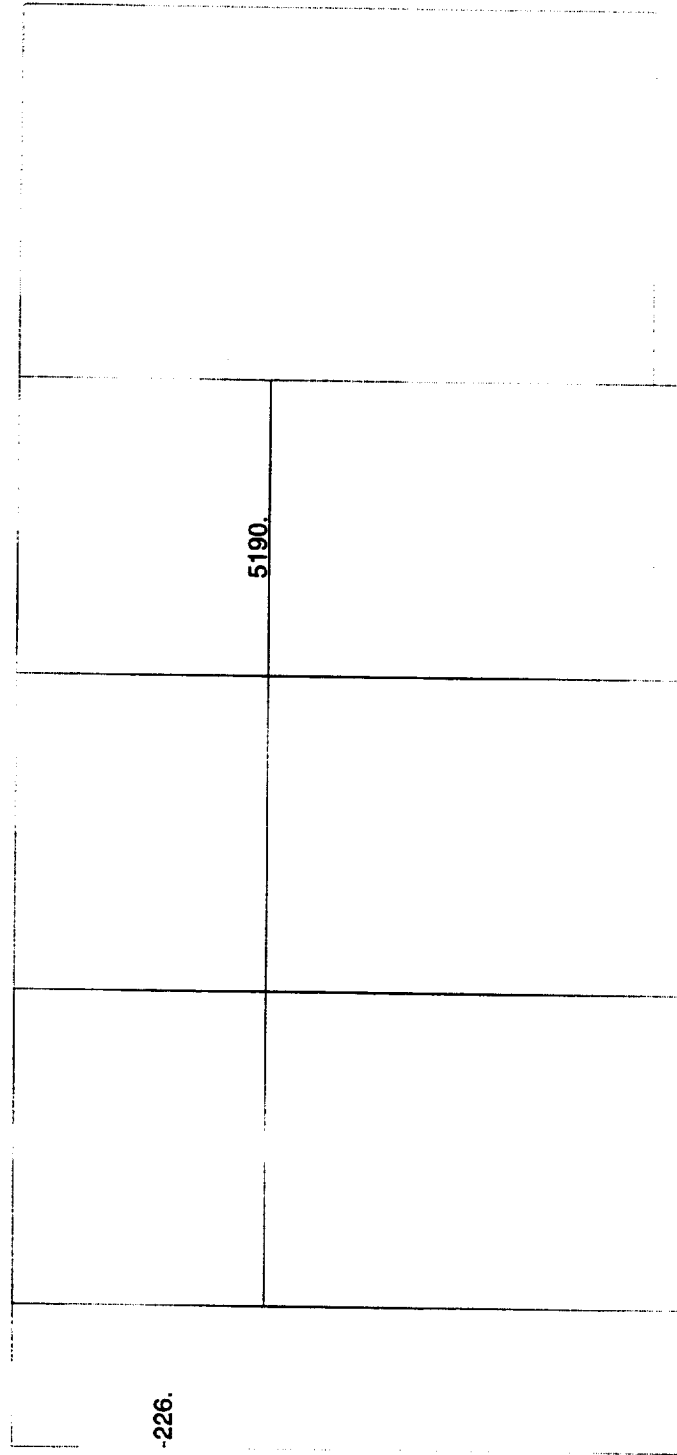


X
Z
Y



FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:47:58

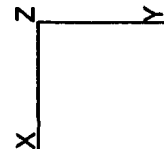
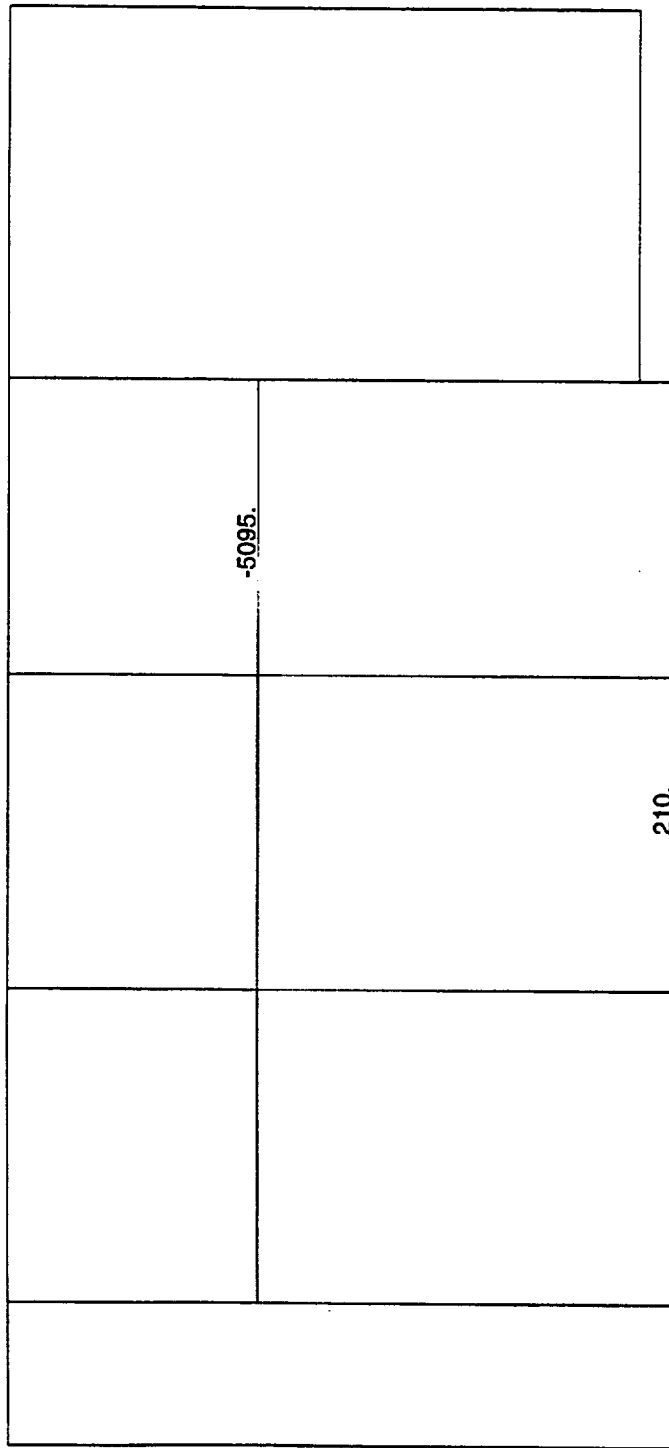
Lower Baseplate Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

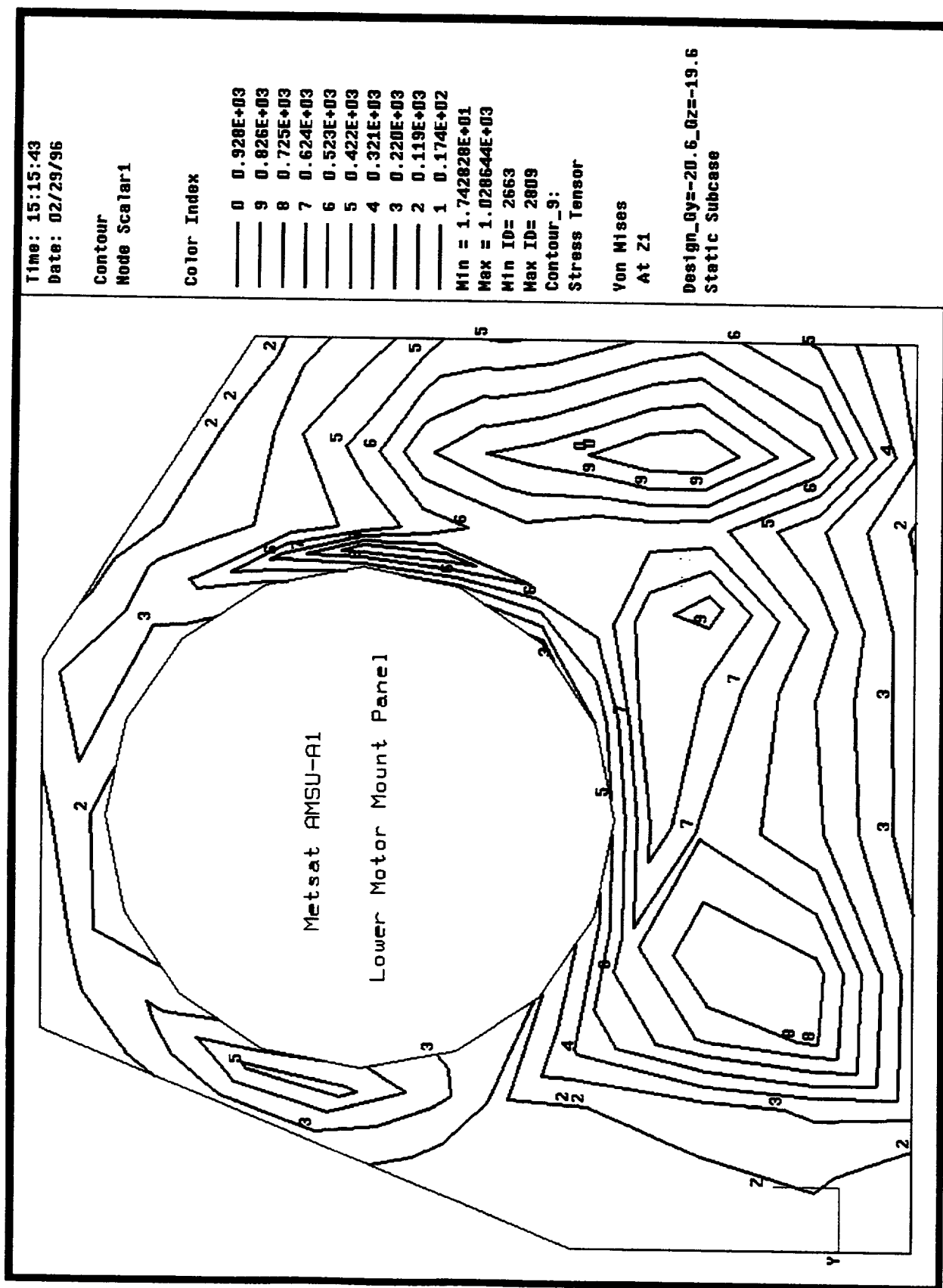
FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:48:16

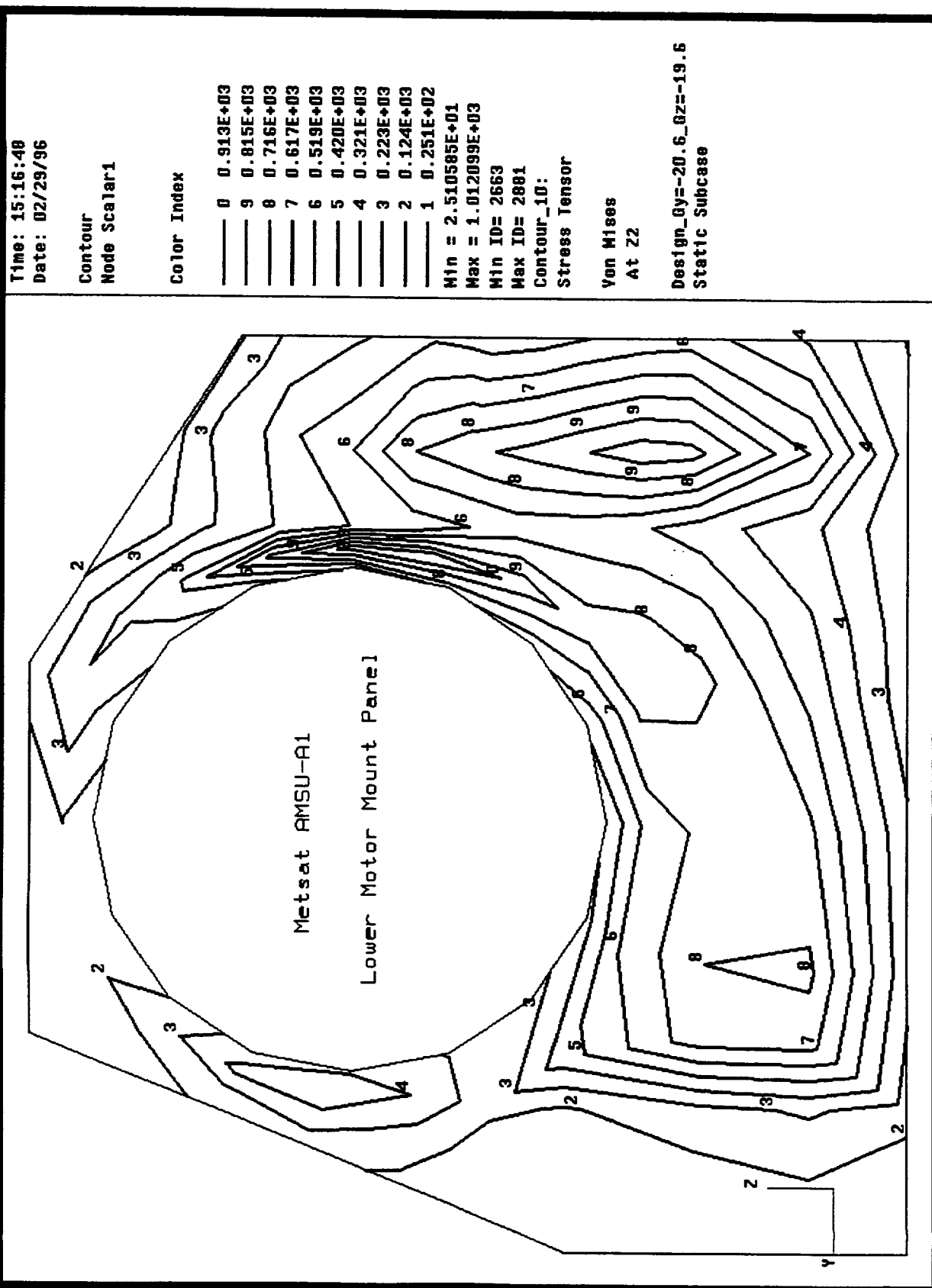
Lower Baseplate Beams



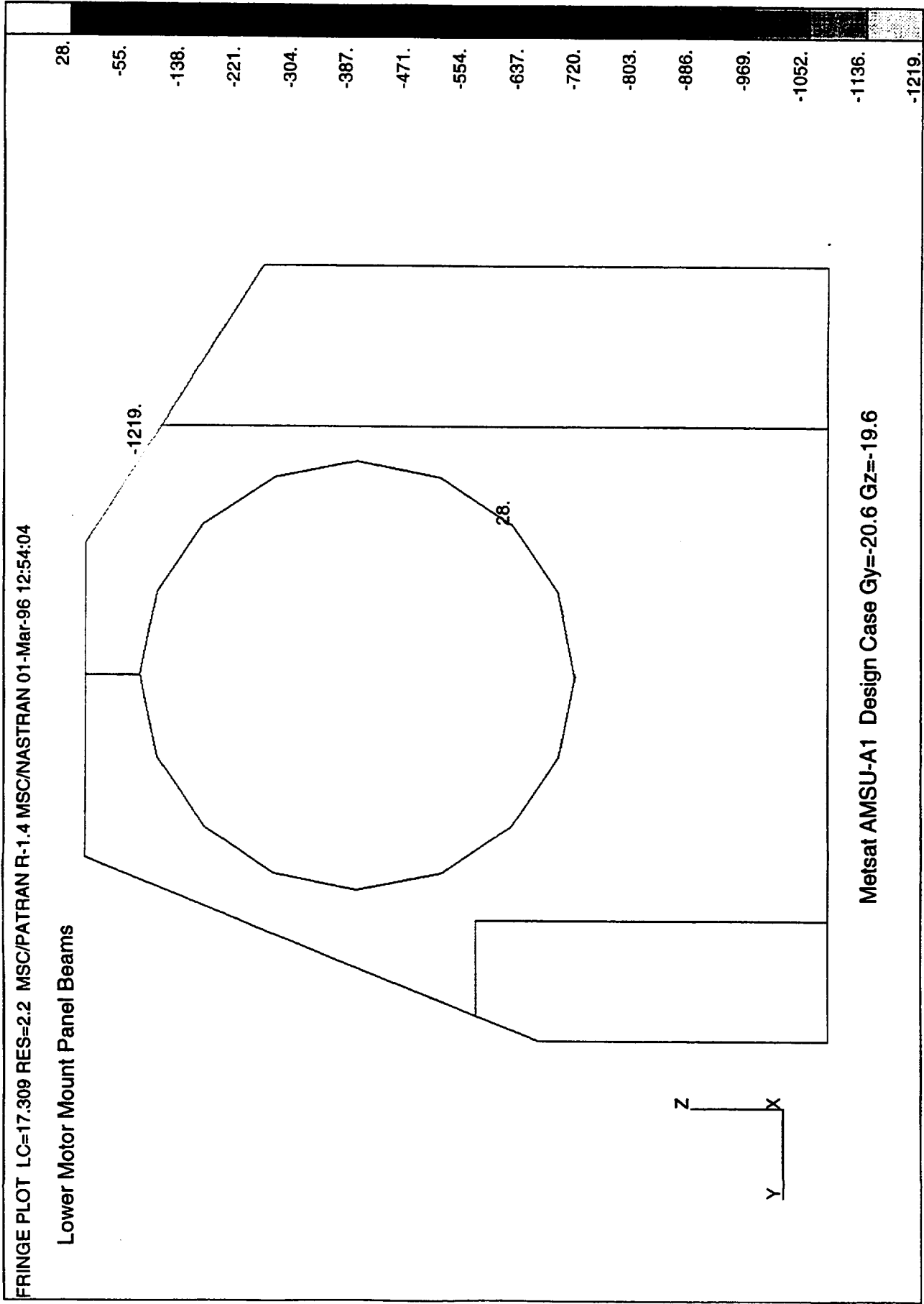
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

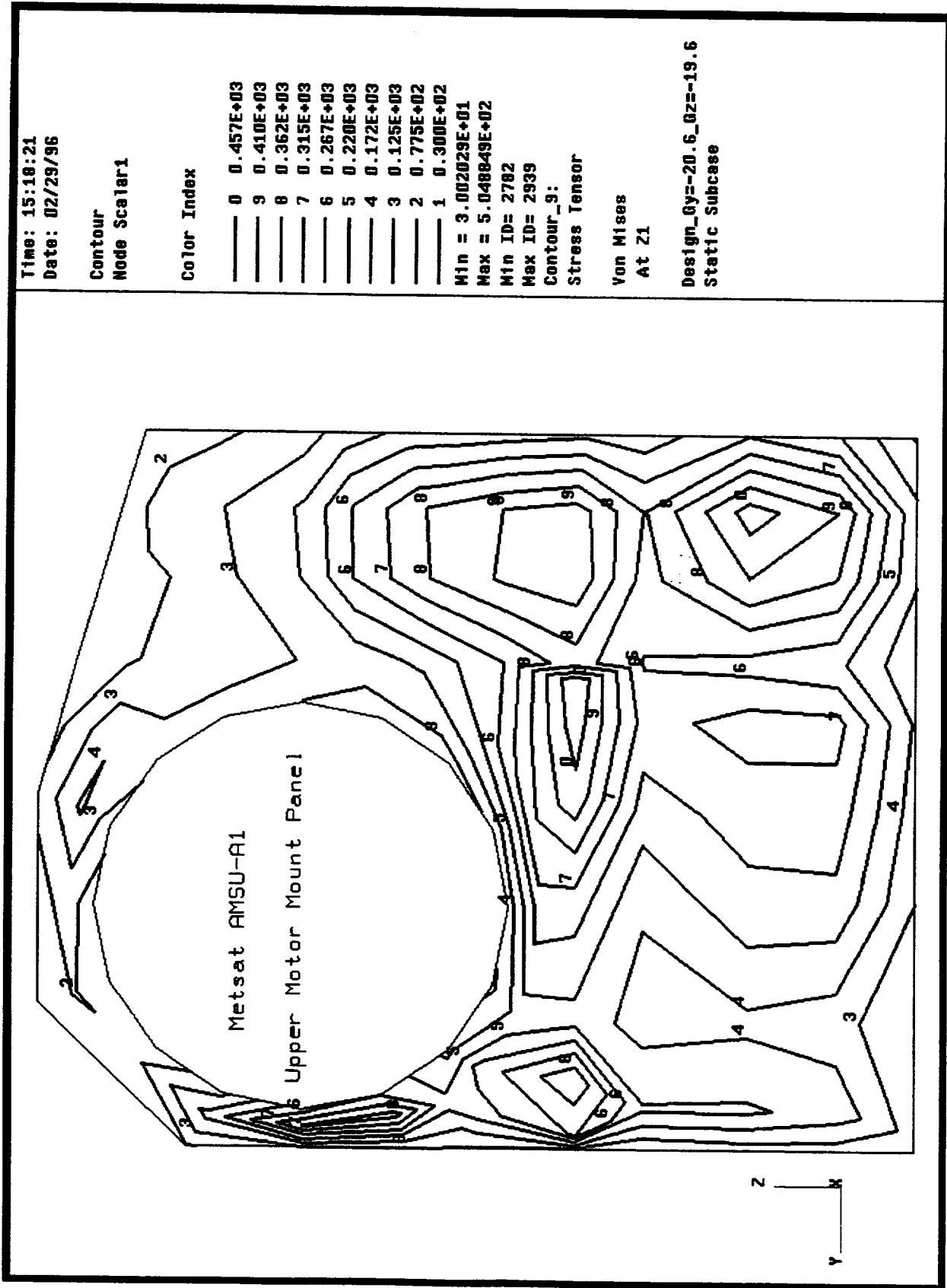
210.
-144.
-498.
-851.
-1205.
-1559.
-1912.
-2266.
-2620.
-2973.
-3327.
-3681.
-4034.
-4388.
-4741.
-5095.











Time: 15:17:13
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.431E+03
9	0.386E+03
8	0.341E+03
7	0.296E+03
6	0.250E+03
5	0.205E+03
4	0.160E+03
3	0.115E+03
2	0.694E+02
1	0.242E+02

Min = 2.416322E+01

Max = 4.766211E+02

Min ID= 2776

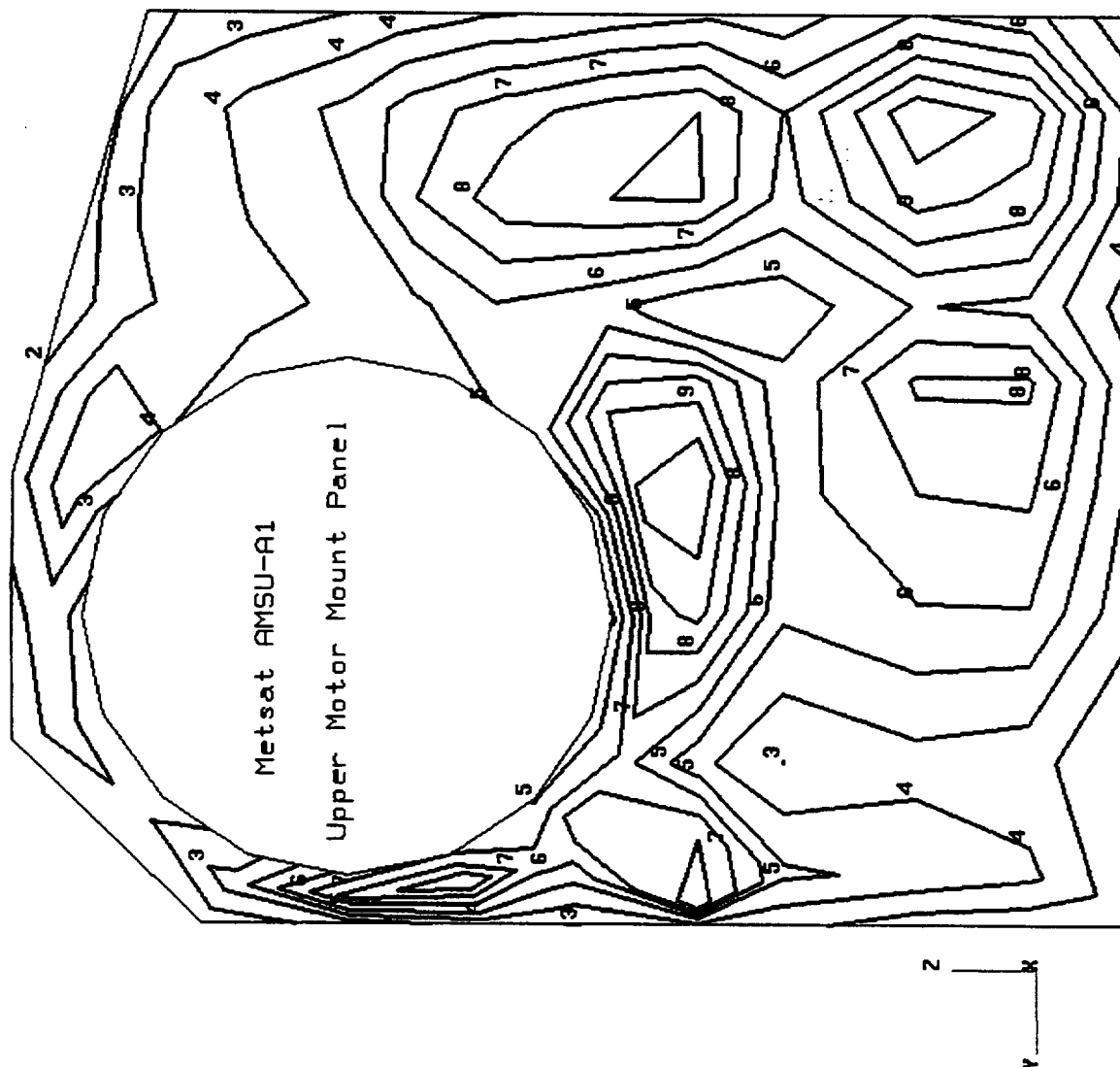
Max ID= 2741

Contour_10:

Stress Tensor

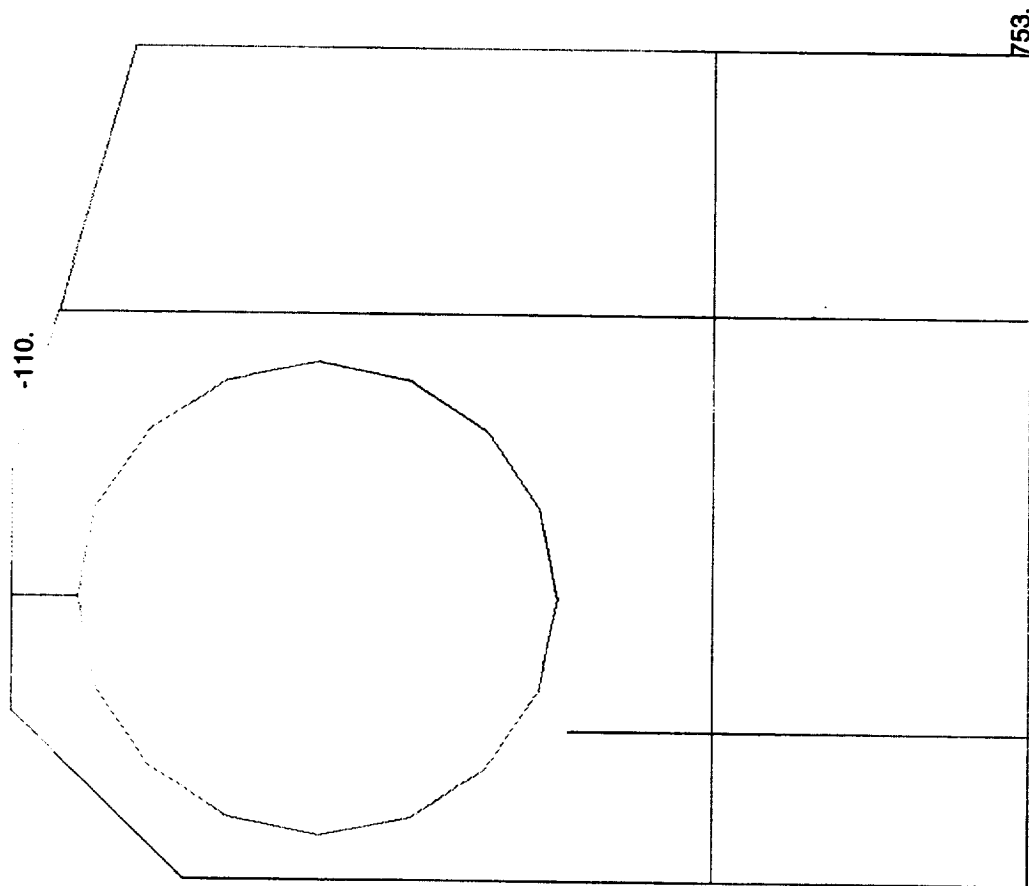
Von Mises
At 22

Design_0y=-20.6_0z=-19.6
Static Subcase



FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:00:27

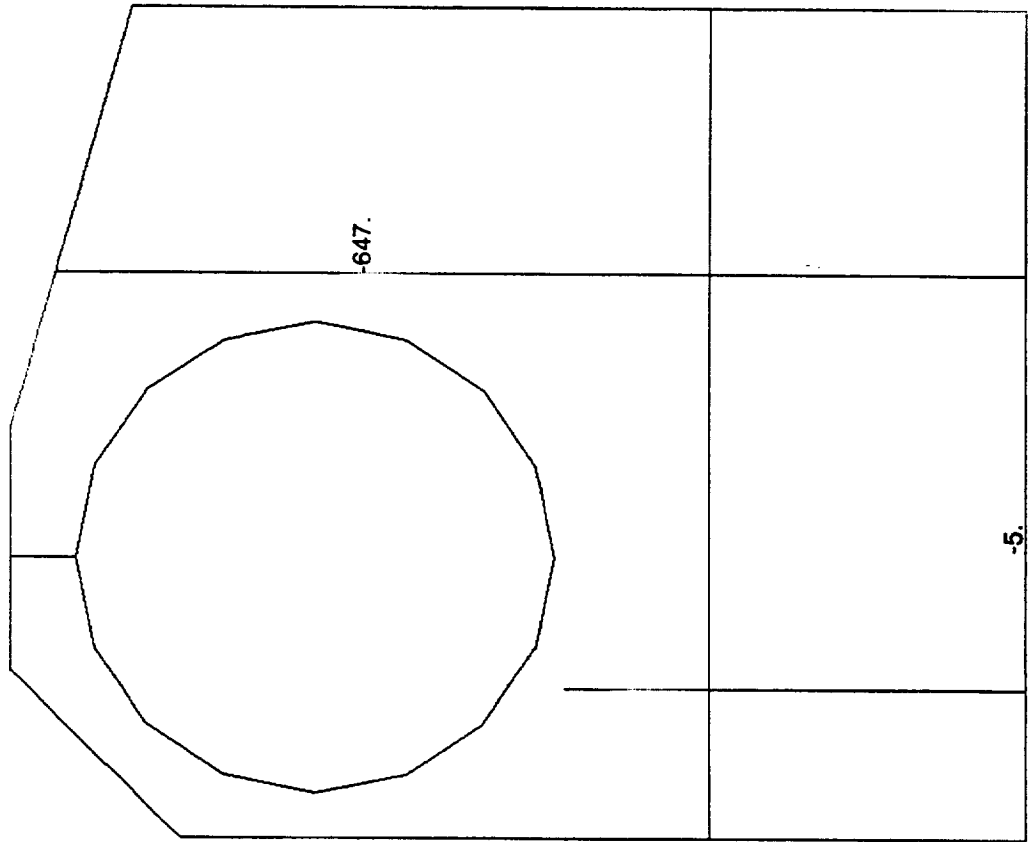
Upper Motor Mount Panel Beams



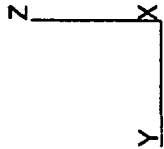
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:00:33

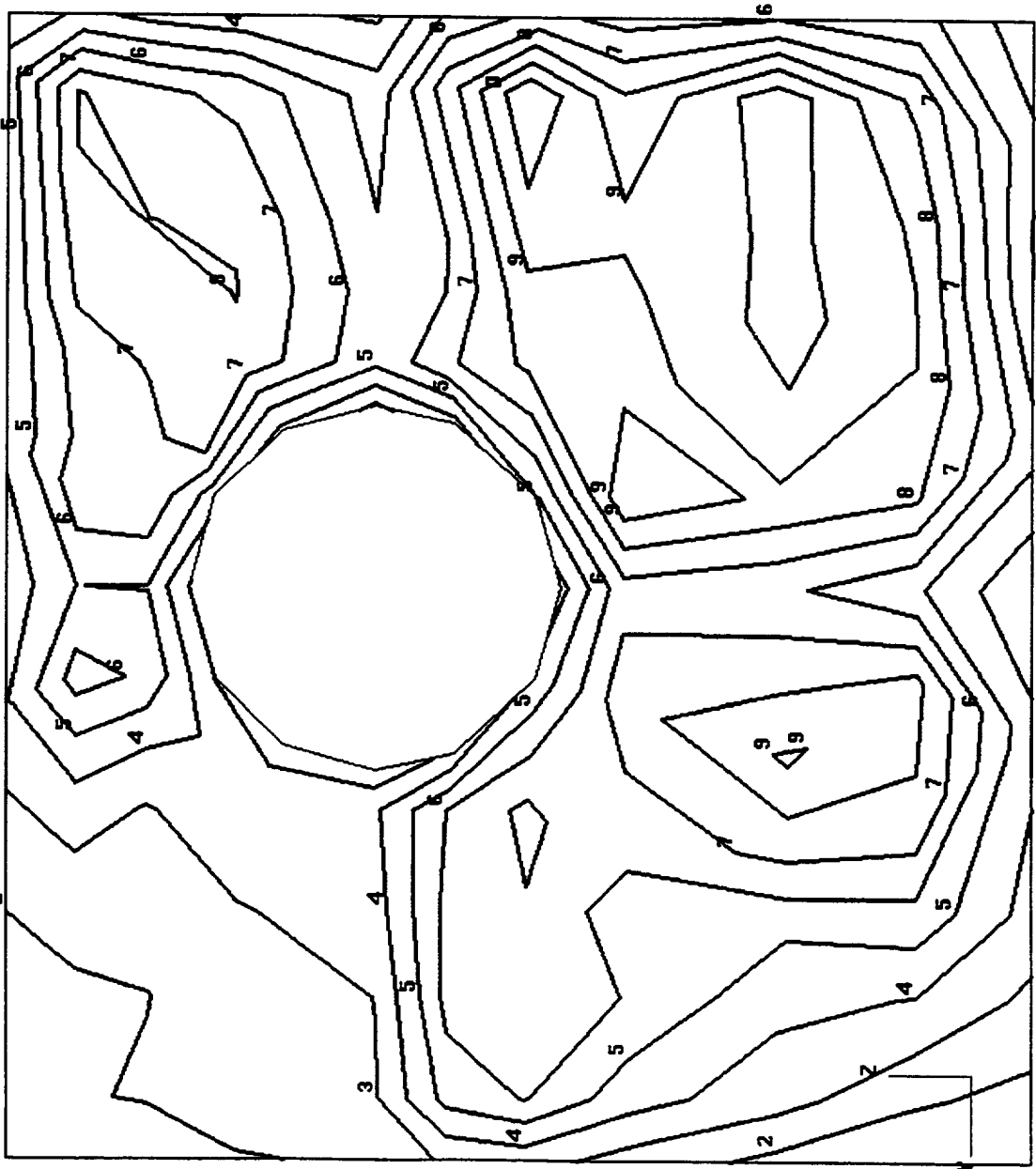
Upper Motor Mount Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6



Metsat AMSU-A1 Lower Front Panel



Time: 14:55:24
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.103E+04
—	9	0.917E+03
—	8	0.805E+03
—	7	0.693E+03
—	6	0.580E+03
—	5	0.468E+03
—	4	0.356E+03
—	3	0.243E+03
—	2	0.131E+03
—	1	0.180E+02

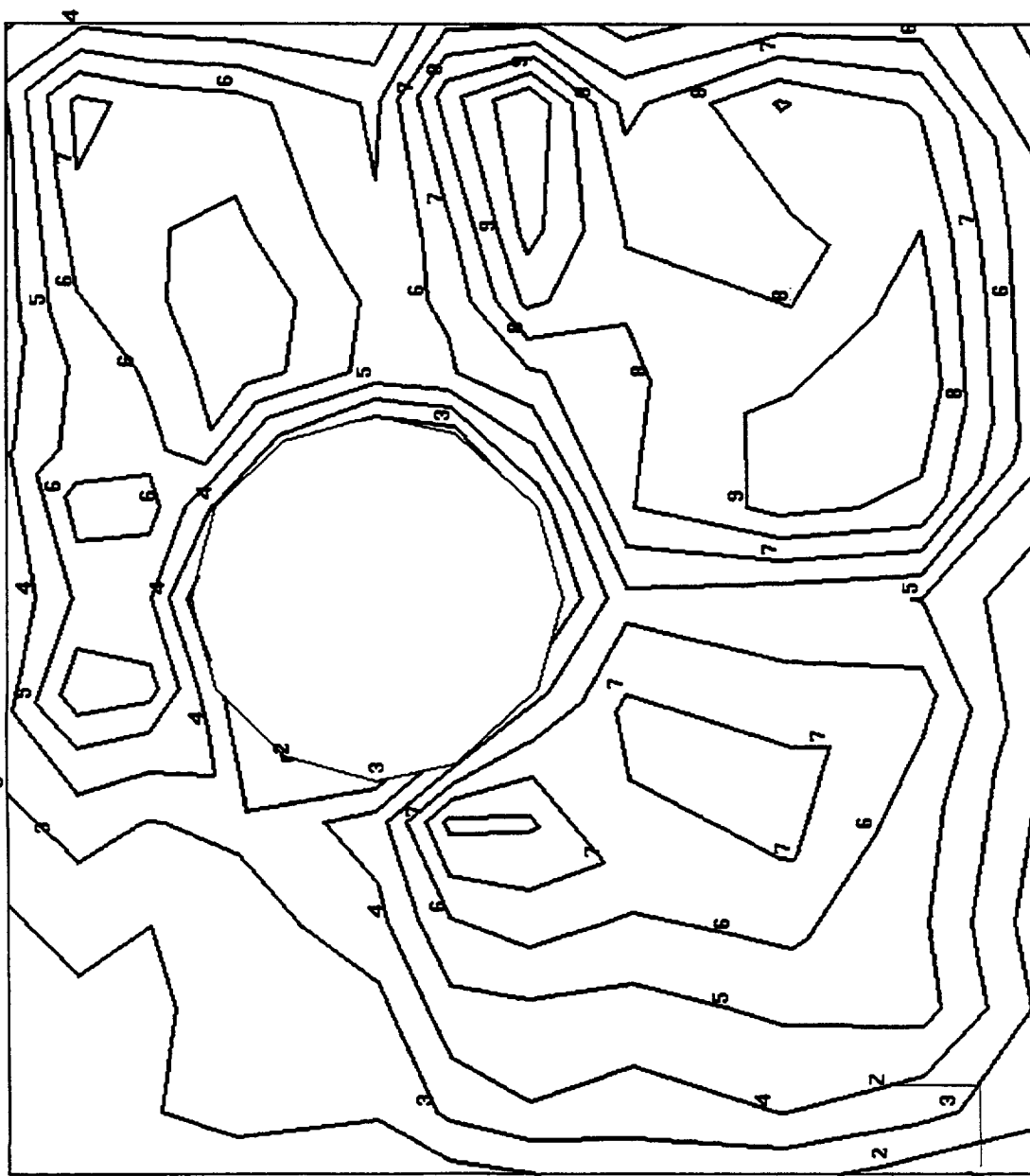
Min = 1.880786E+01
Max = 1.141767E+03
Min ID= 1191
Max ID= 1886
Contour_9:
Stress Tensor

Von Mises
At Z1

Design_Qy=-20.6_Qz=-19.6
Static Subcase

Time: 14:51:53
Date: 02/29/96

Metsat AMSU-A1 Lower Front Panel



Contour
Node Scalar1

Color Index

—	0	0.112E+04
—	9	0.100E+04
—	8	0.881E+03
—	7	0.761E+03
—	6	0.641E+03
—	5	0.521E+03
—	4	0.401E+03
—	3	0.280E+03
—	2	0.160E+03
—	1	0.400E+02

Min = 3.999073E+01

Max = 1.241999E+03

Min ID= 1455

Max ID= 1886

Contour_10:

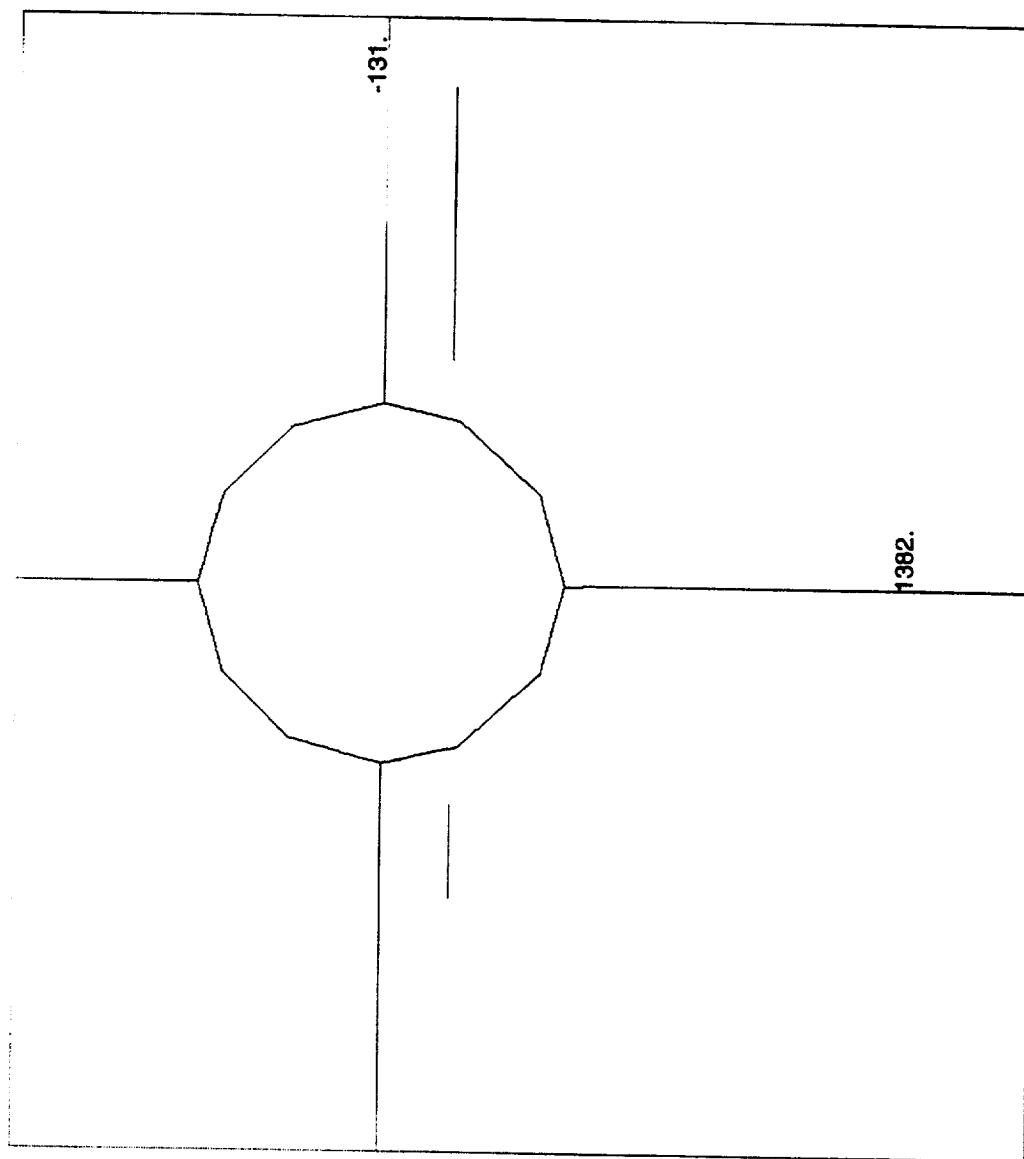
Stress Tensor

Von Mises

At 22

Design_0y=-20.6_0z=-19.6
Static Subcase

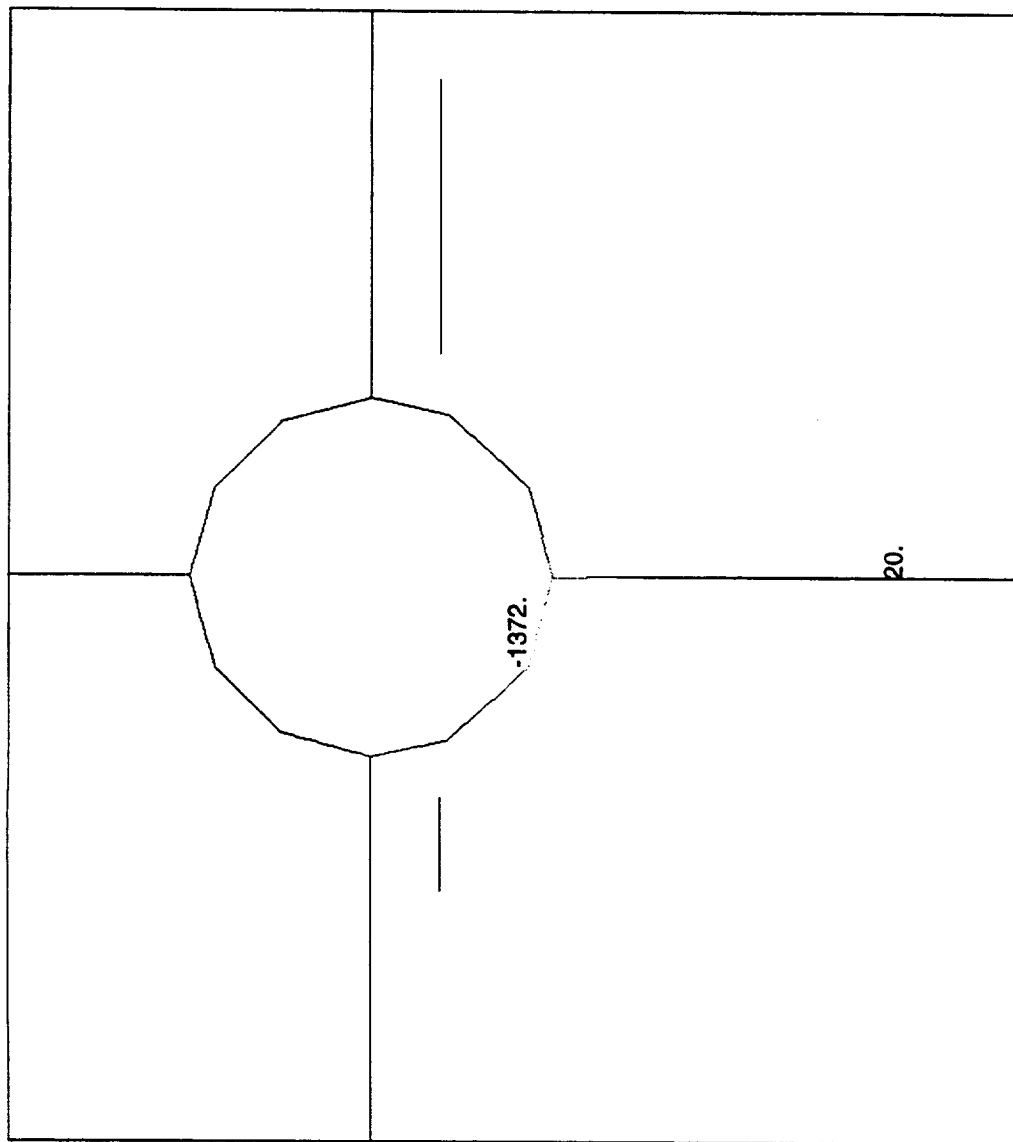
FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:28:40
Lower Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

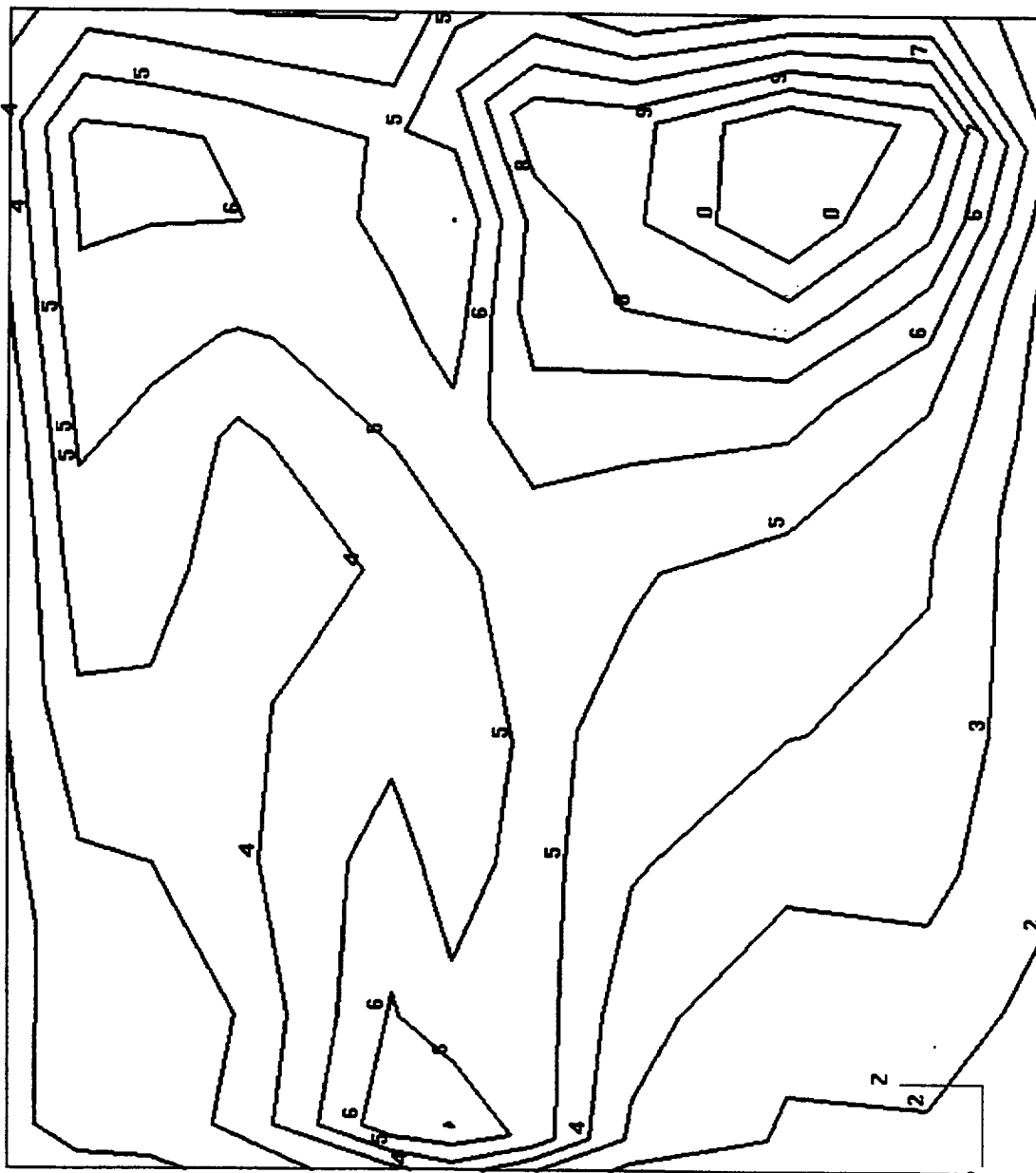
FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:28:50

Lower Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Metsat AMSU-A1 Lower Aft Panel



Time: 14:50:44
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.163E+04
1	0.145E+04
2	0.128E+04
3	0.110E+04
4	0.930E+03
5	0.757E+03
6	0.583E+03
7	0.409E+03
8	0.235E+03
9	0.617E+02

Min = 6.174108E+01

Max = 1.799100E+03

Min ID= 1205

Max ID= 1227

Contour_9:

Stress Tensor

Von Mises

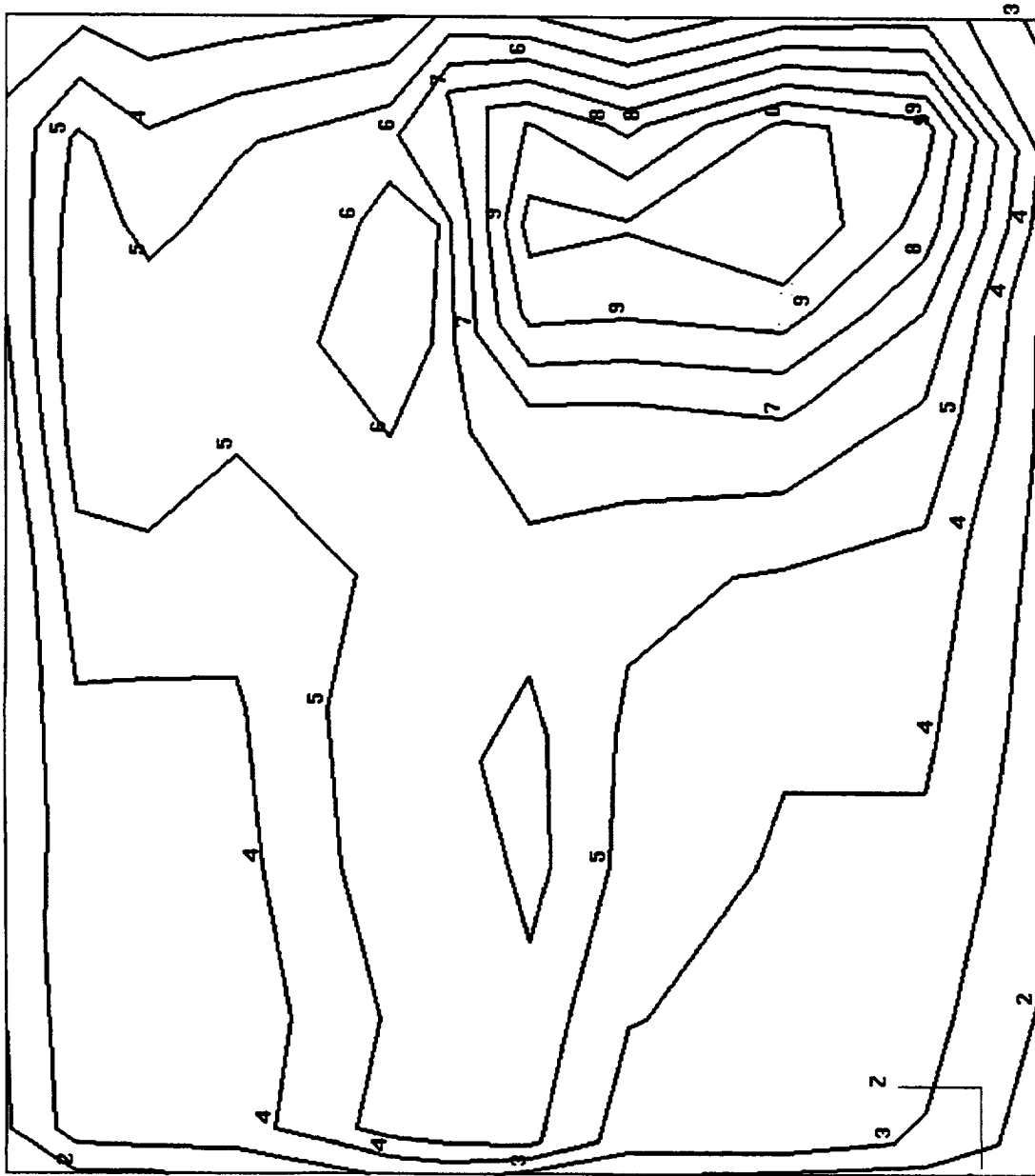
At Z1

Design_0y=-20.6_0z=-19.6

Static Subcase

Time: 14:51:14
Date: 02/29/96

Metsat AMSU-A1 Lower Aft Panel



Contour
Node Scalar1

Color Index

—	0	0.154E+04
—	9	0.138E+04
—	8	0.121E+04
—	7	0.105E+04
—	6	0.884E+03
—	5	0.721E+03
—	4	0.557E+03
—	3	0.393E+03
—	2	0.229E+03
—	1	0.649E+02

Min = 6.493102E+01

Max = 1.703930E+03

Min ID= 1205

Max ID= 1227

Contour_10:

Stress Tensor

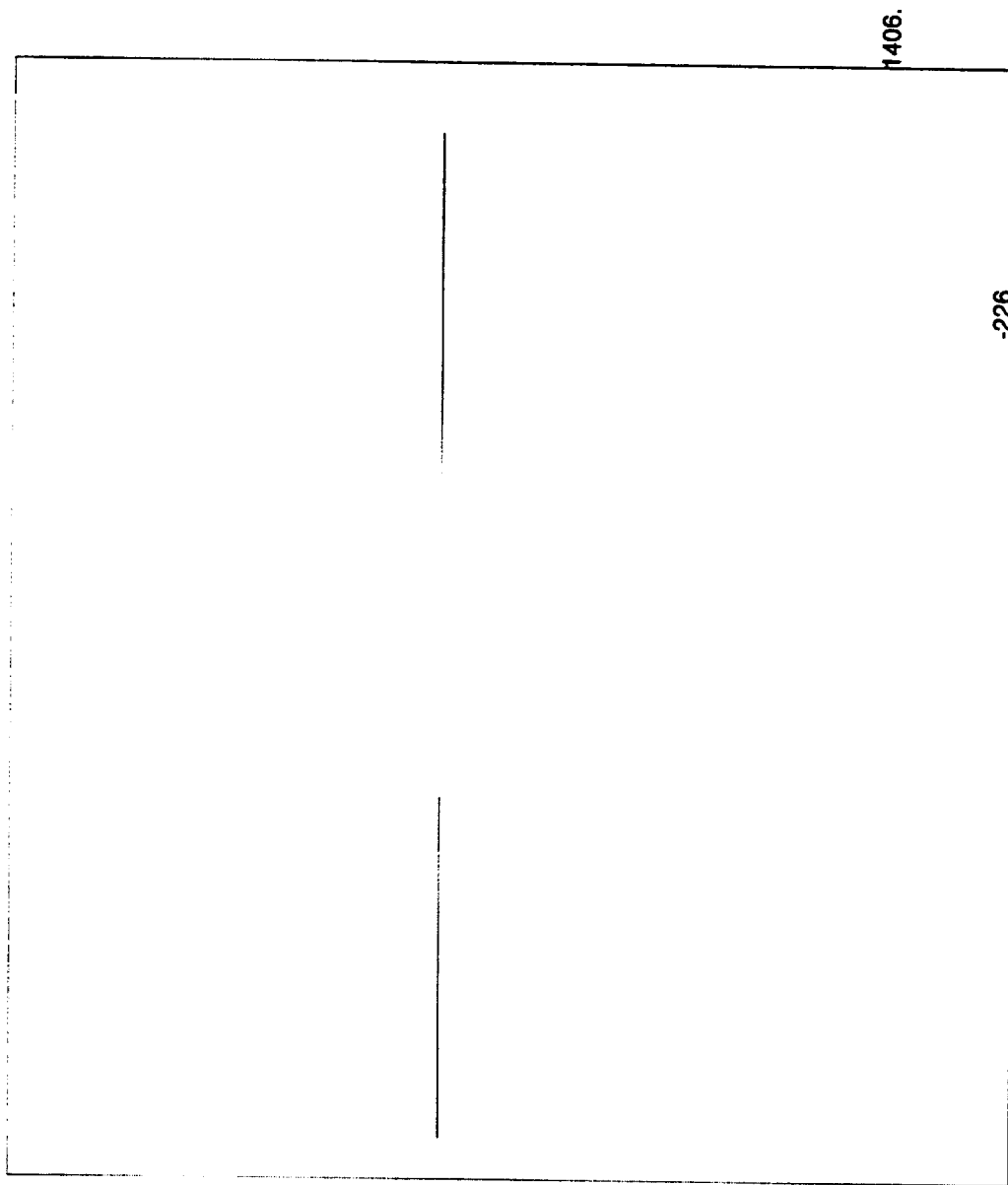
Von Mises

At 22

Design_0y=-20.6_0z=-19.6
Static Subcase

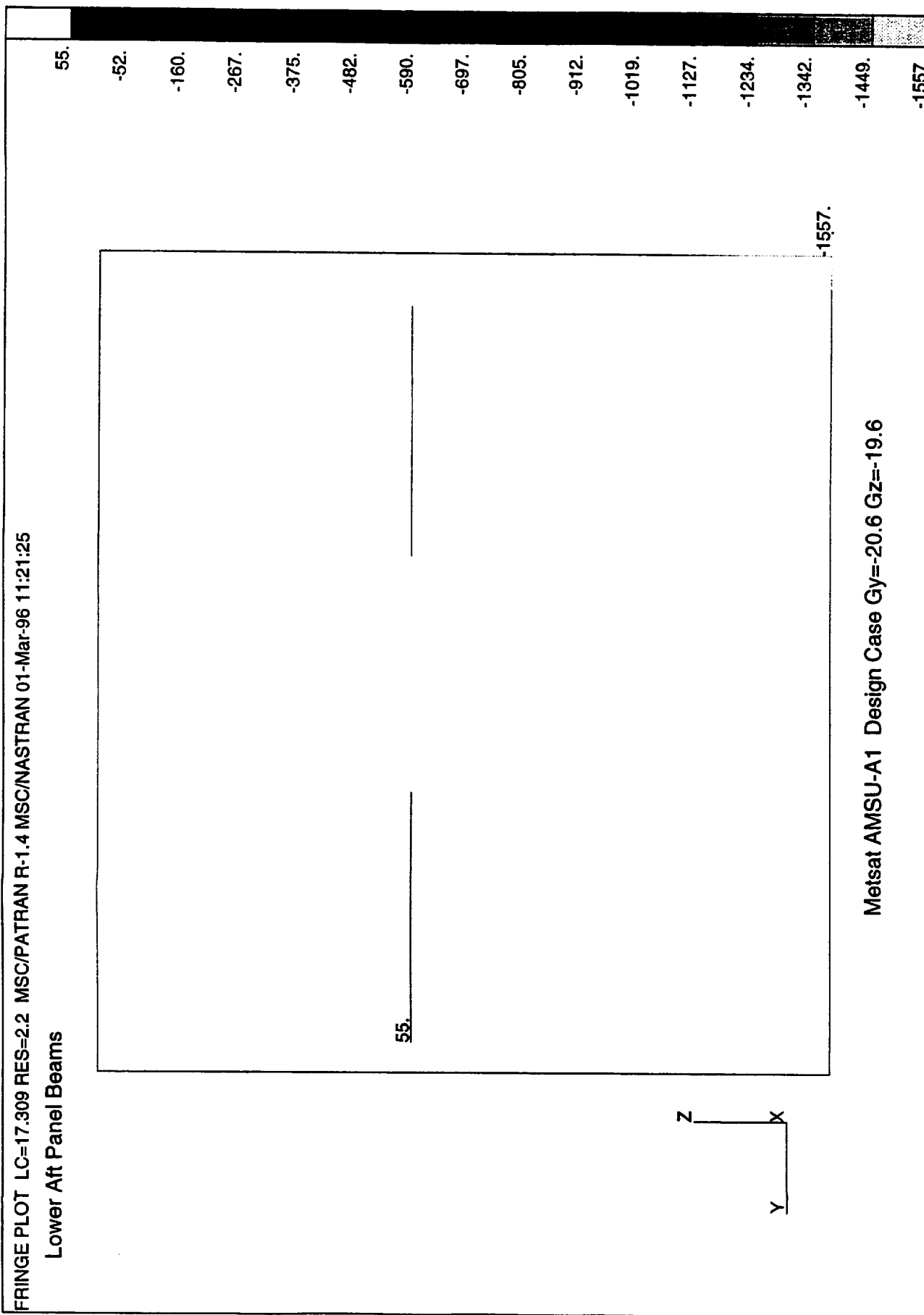
FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:21:13

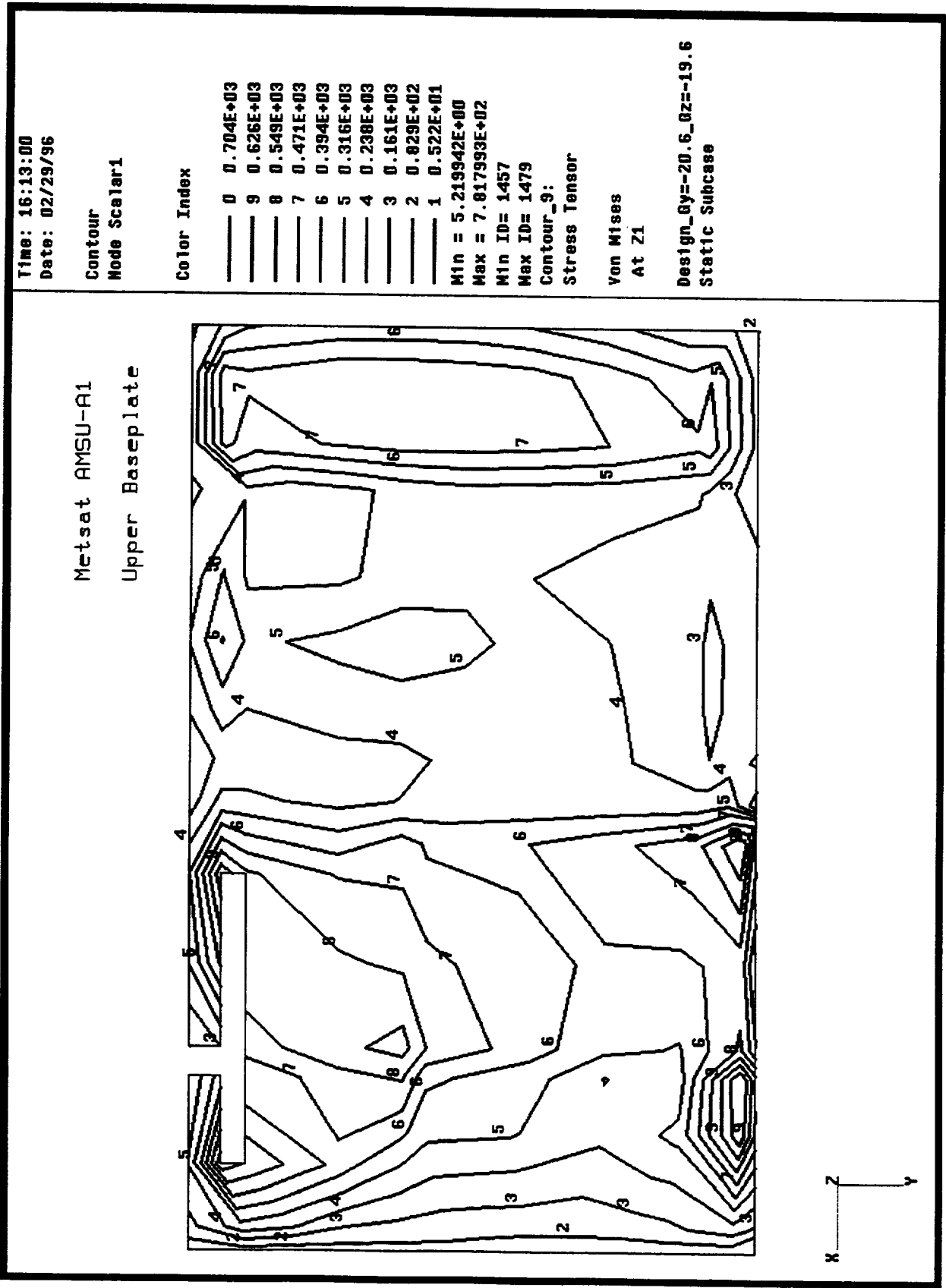
Lower Aft Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

1406.
1297.
1188.
1080.
971.
862.
753.
644.
536.
427.
318.
209.
101.
-8.
-117.
-226.





Time: 16:13:27
Date: 02/29/96

Contour
Node Scalar1

Color Index

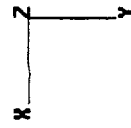
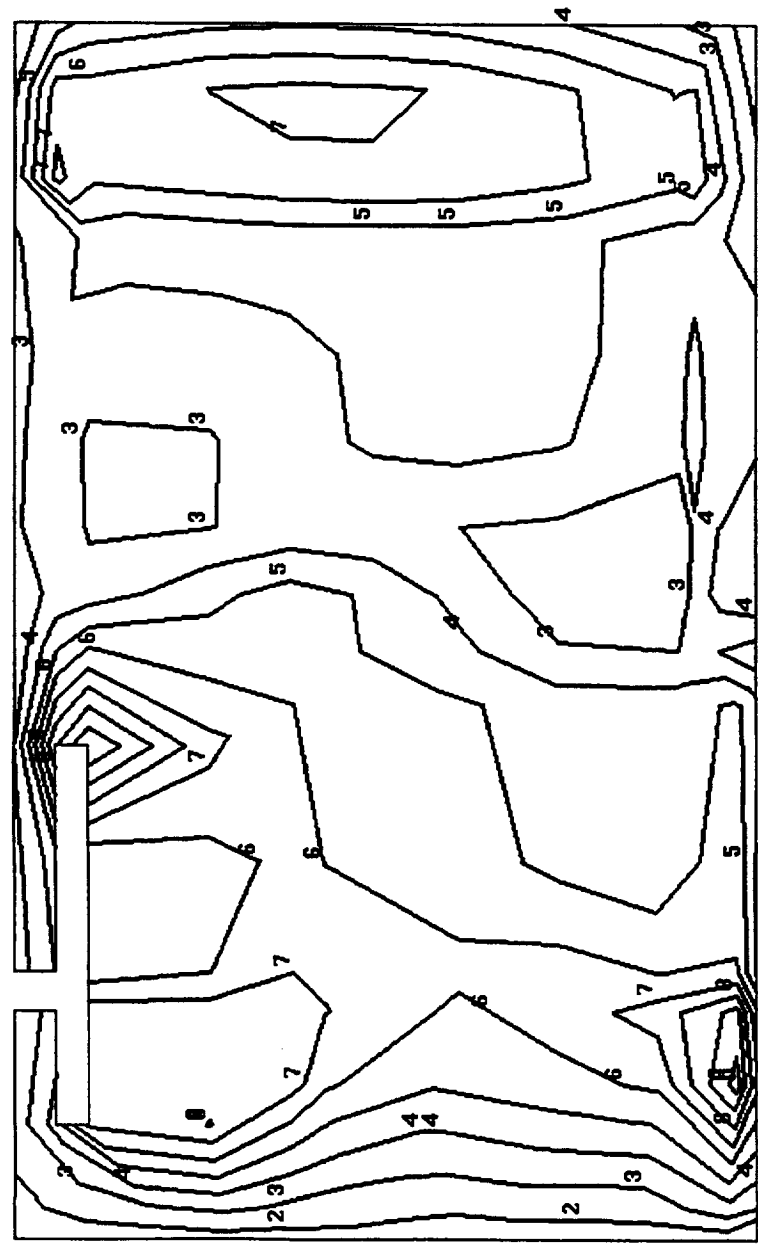
—	0	0.769E+03
—	9	0.684E+03
—	8	0.600E+03
—	7	0.515E+03
—	6	0.431E+03
—	5	0.346E+03
—	4	0.261E+03
—	3	0.177E+03
—	2	0.920E+02
—	1	0.739E+01

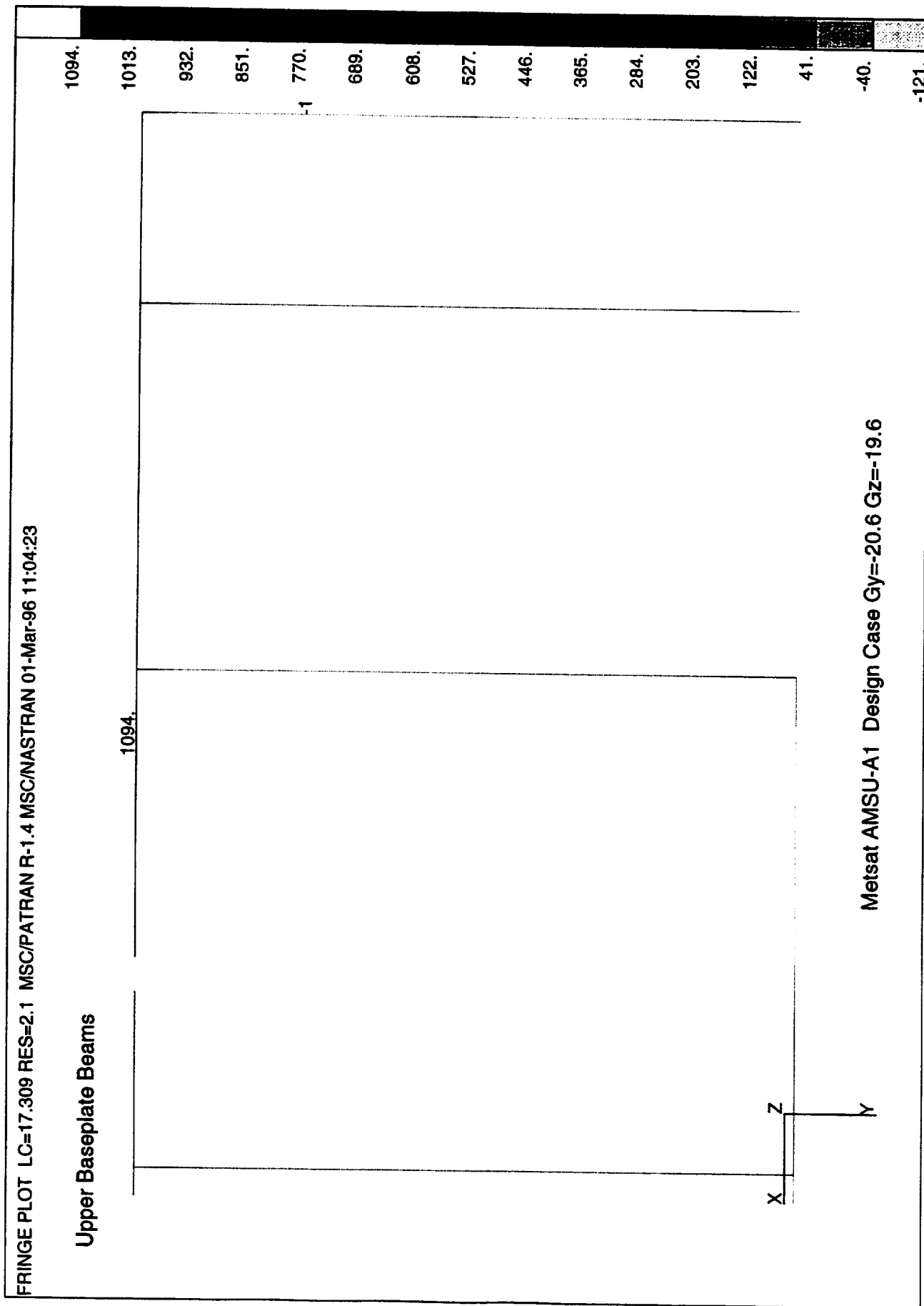
Min = 7.394208E+00
Max = 8.537070E+02
Min ID= 1458
Max ID= 1516
Contour_ID:
Stress Tensor

Von Mises
At 22

Design_Qy=-20.6_Qz=-19.6
Static Subcase

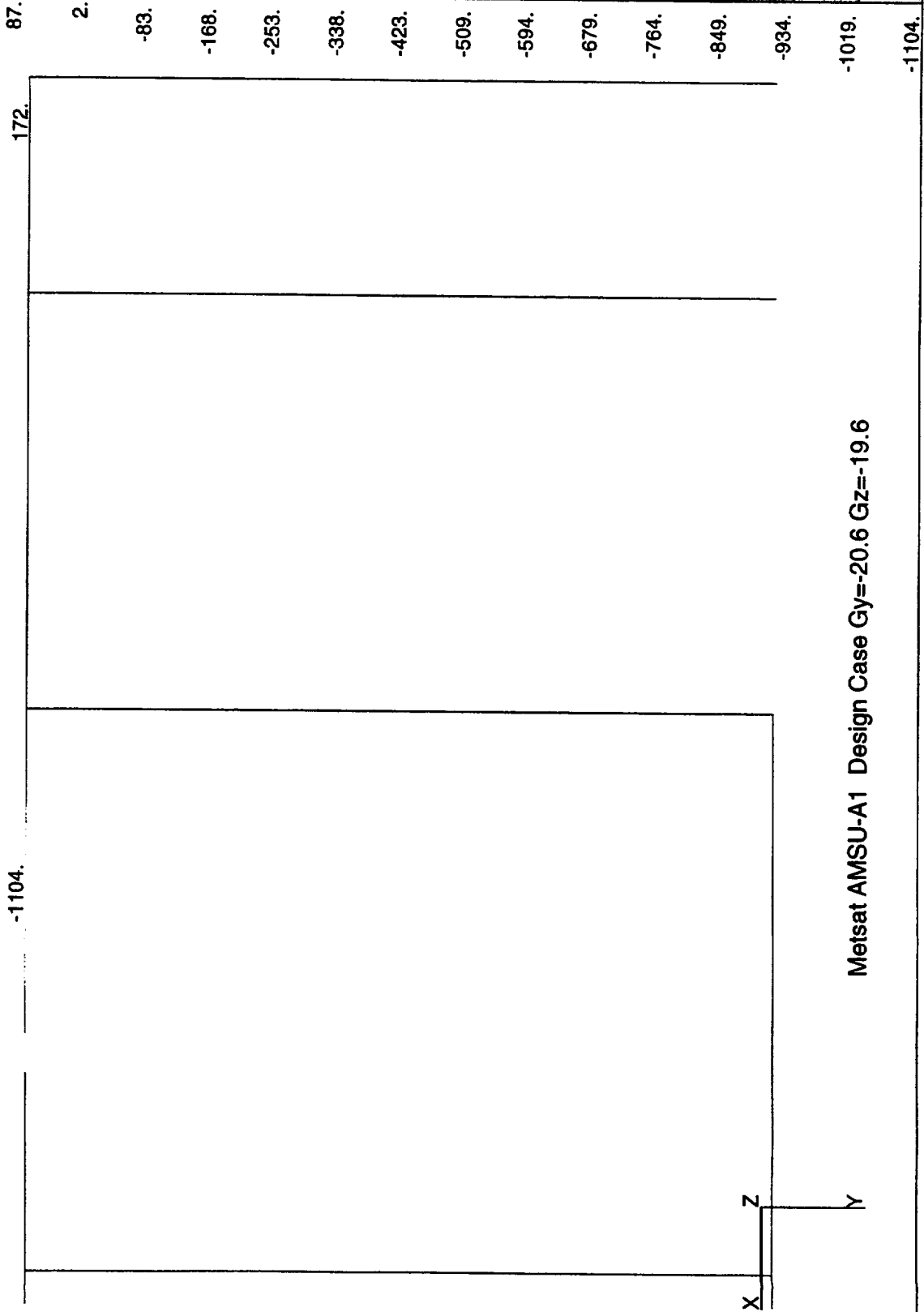
Metsat AMSU-A1
Upper Baseplate



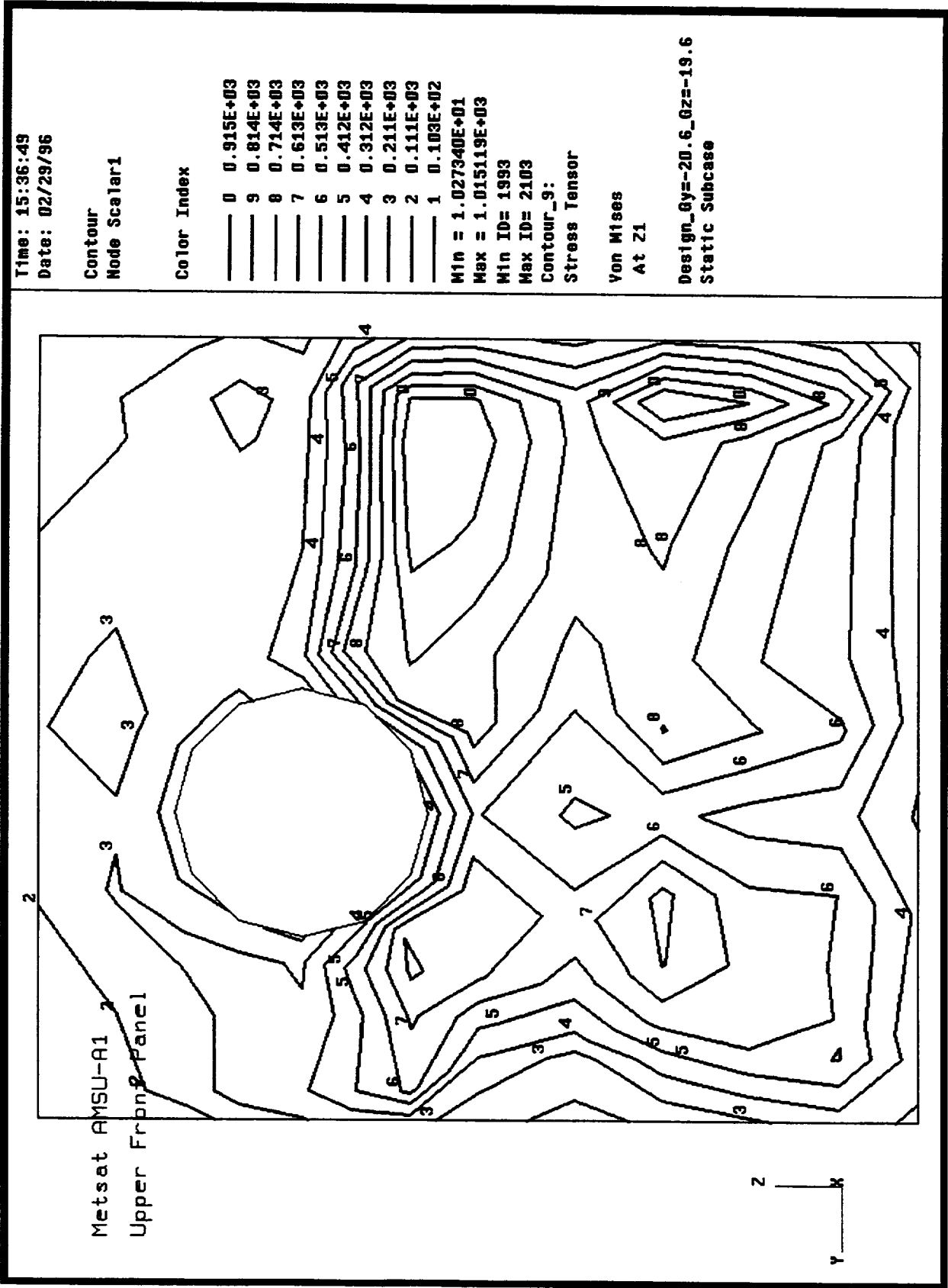


FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:04:10

Upper Baseplate Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6



Time: 15:37:15
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.104E+04
9	0.931E+03
8	0.817E+03
7	0.703E+03
6	0.589E+03
5	0.475E+03
4	0.361E+03
3	0.247E+03
2	0.133E+03
1	0.189E+02

Min = 1.887661E+01
Max = 1.158907E+03

Min ID= 2124

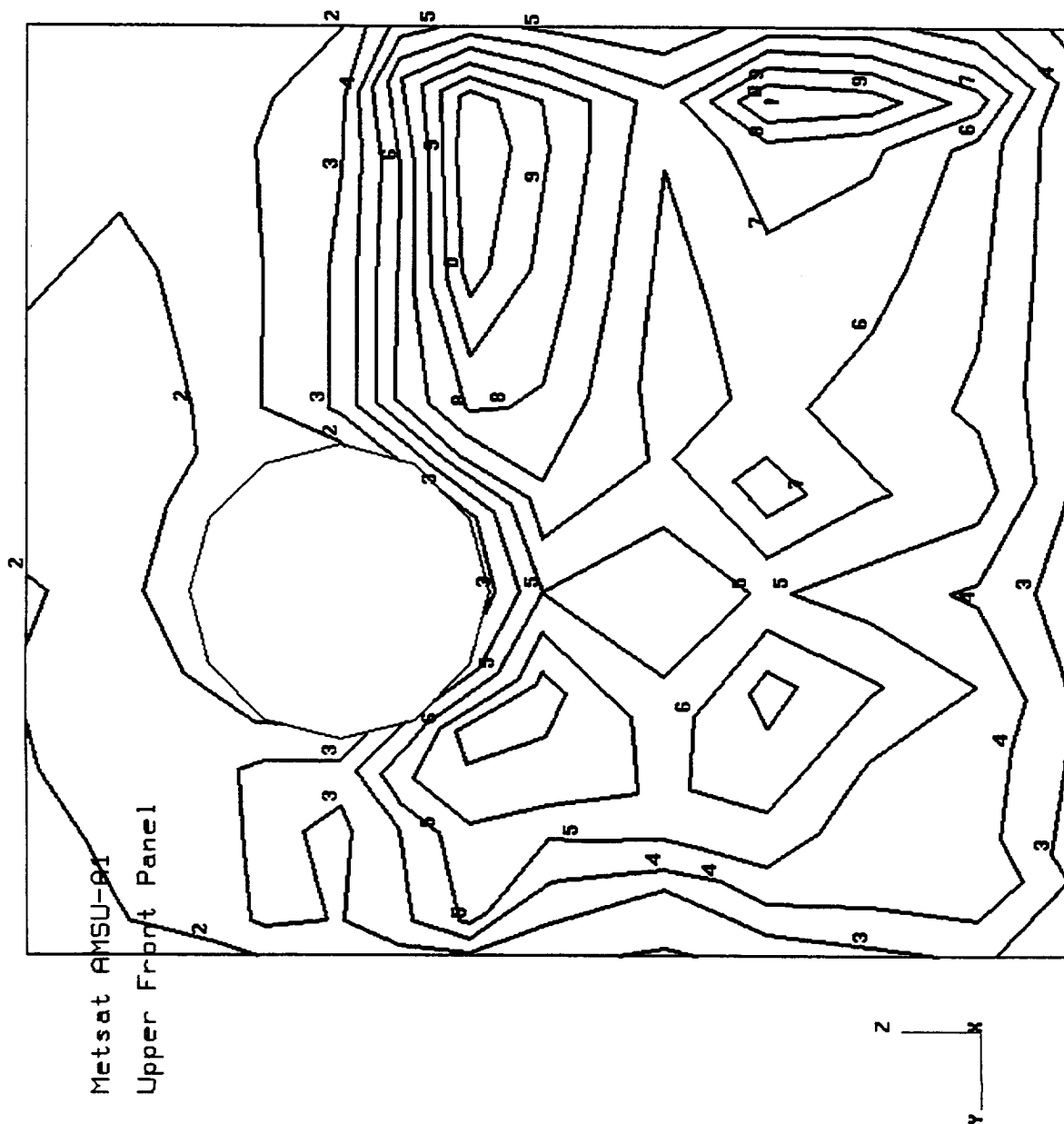
Max ID= 2094

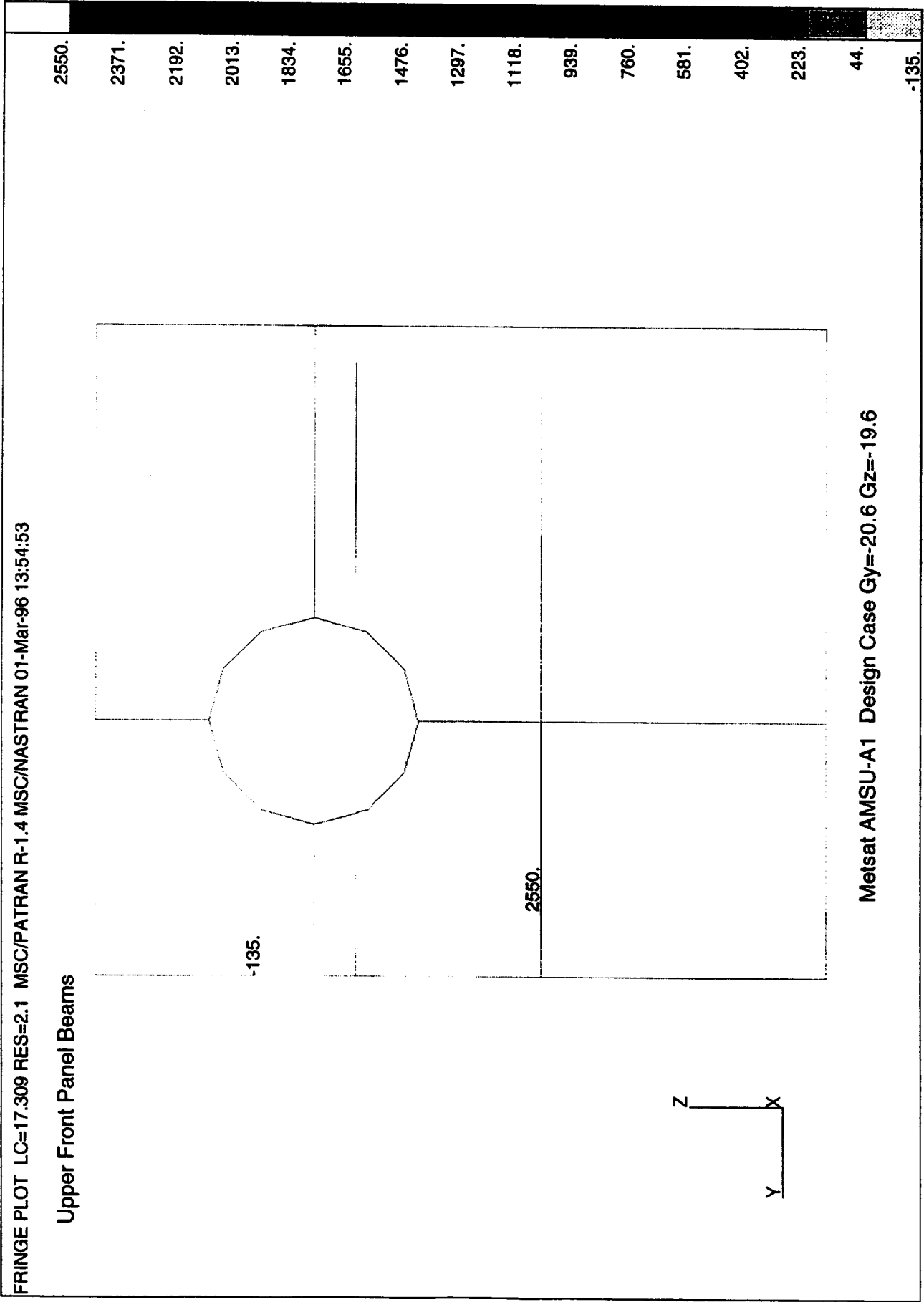
Contour_10:

Stress Tensor

Von Mises
At 22

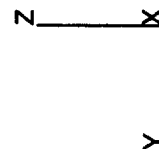
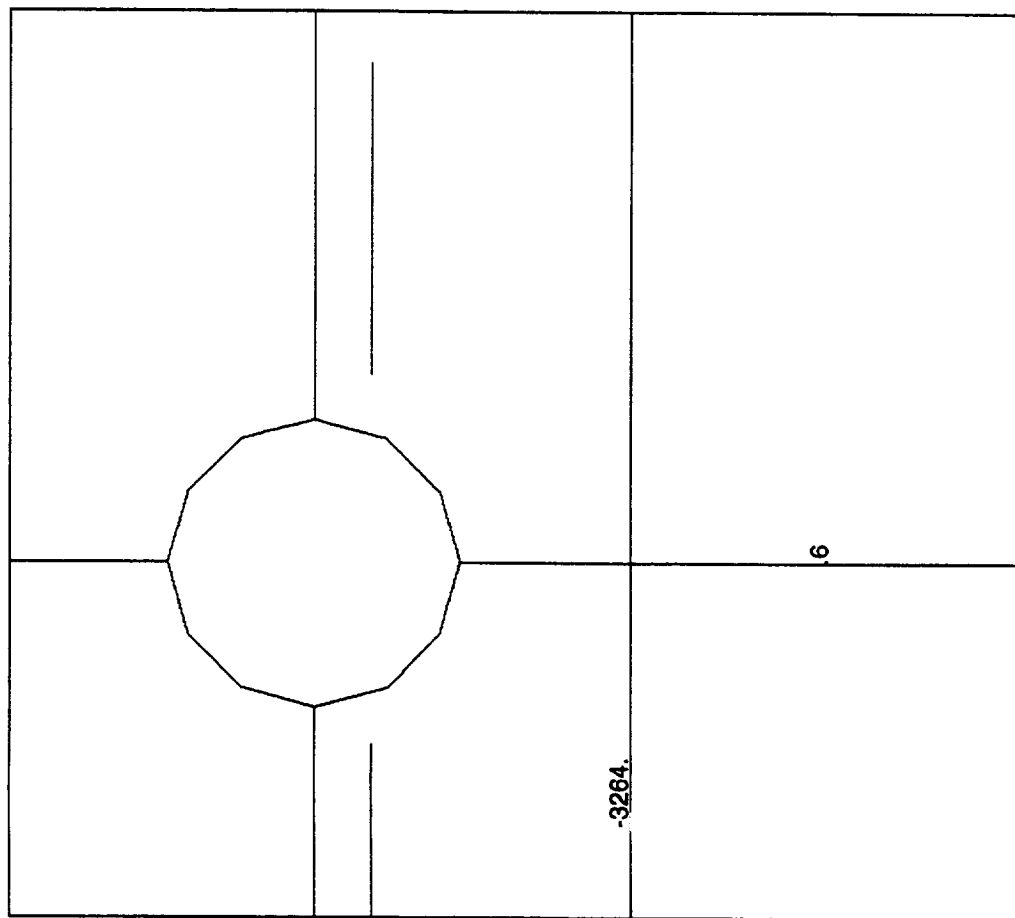
Design_0y=-20.6_0z=-19.6
Static Subcase





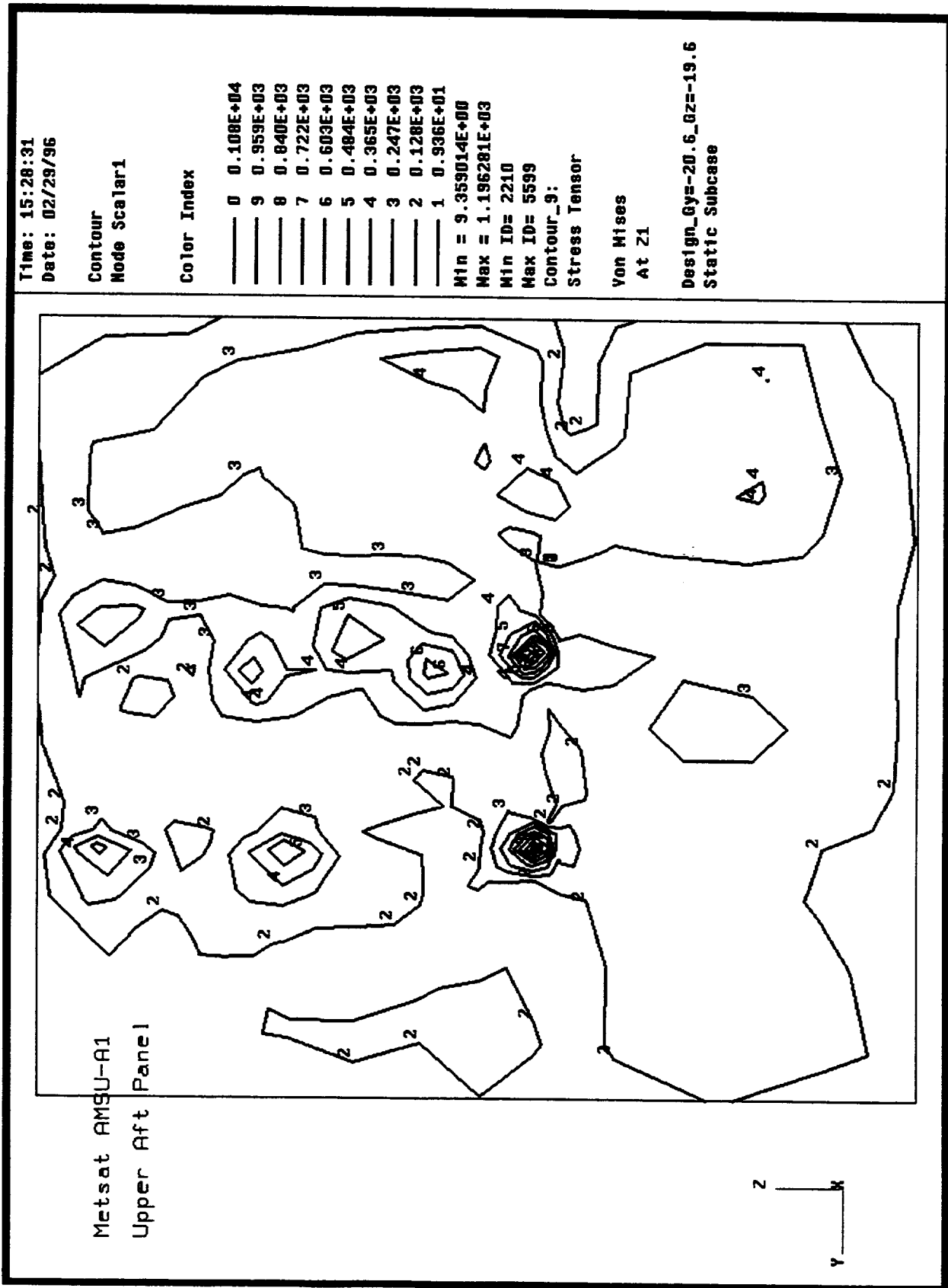
FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:54:58

Upper Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

6
-217.
-435.
-652.
-870.
-1088.
-1305.
-1523.
-1741.
-1958.
-2176.
-2393.
-2611.
-2829.
-3046.
-3264.



Time: 15:27:07
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.949E+03
9	0.844E+03
8	0.740E+03
7	0.635E+03
6	0.530E+03
5	0.426E+03
4	0.321E+03
3	0.217E+03
2	0.112E+03
1	0.752E+01

Min = 7.521501E+00

Max = 1.053453E+03

Min ID= 1458

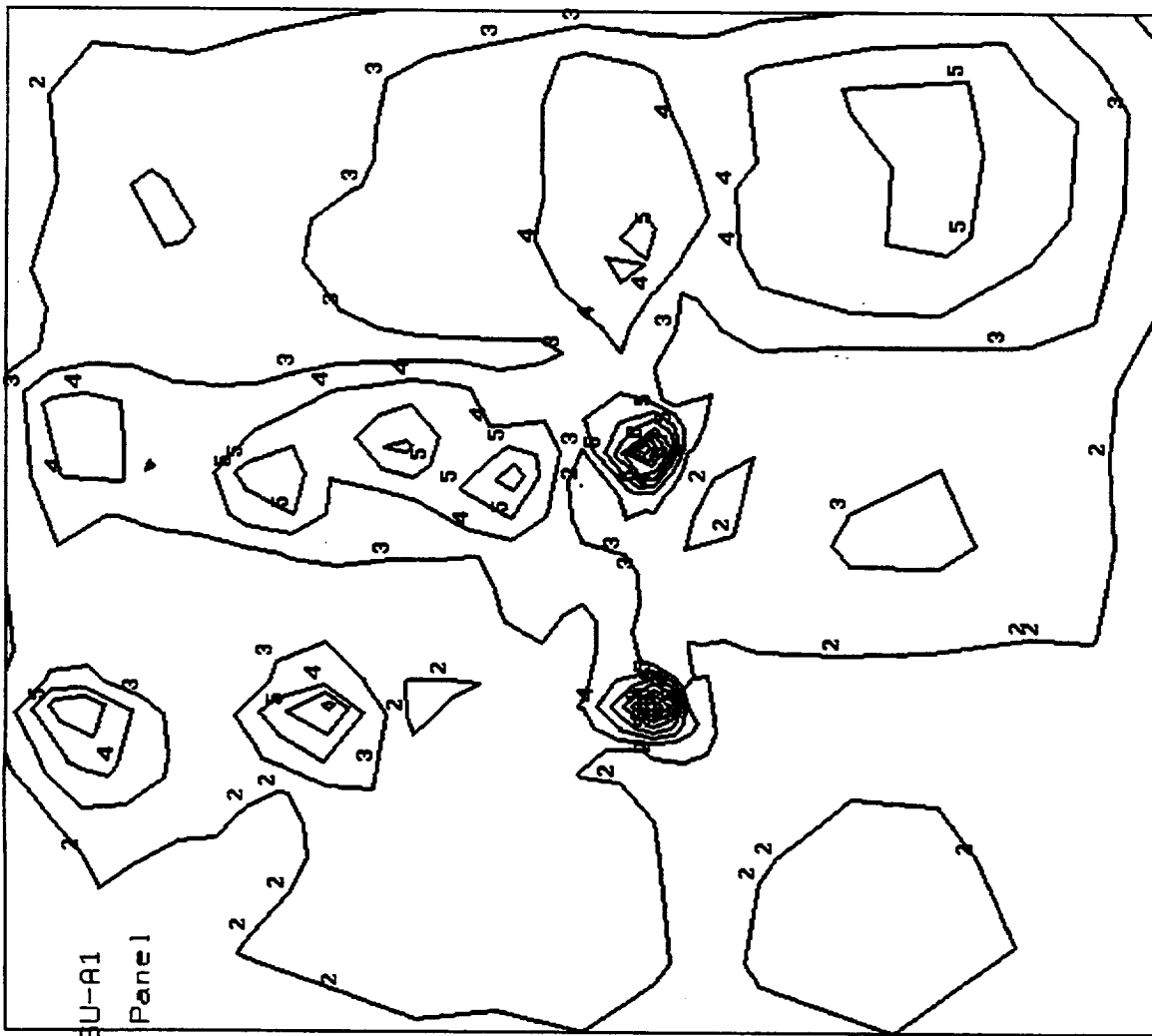
Max ID= 5599

Contour_ID:

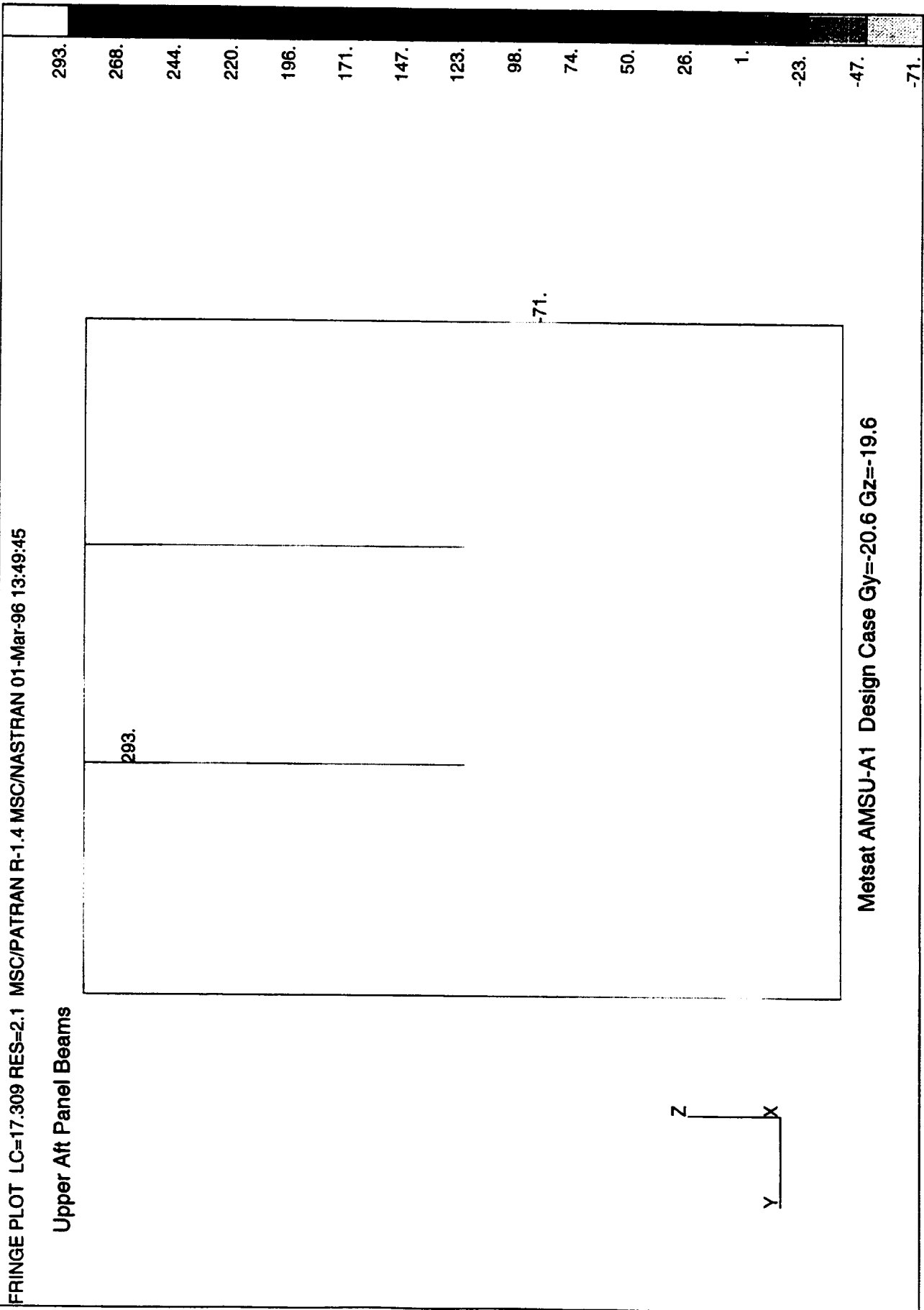
Stress Tensor

Von Mises
At 22

Design_By=-20.6_Gz=-19.6
Static Subcase

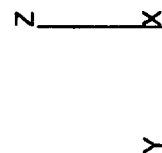
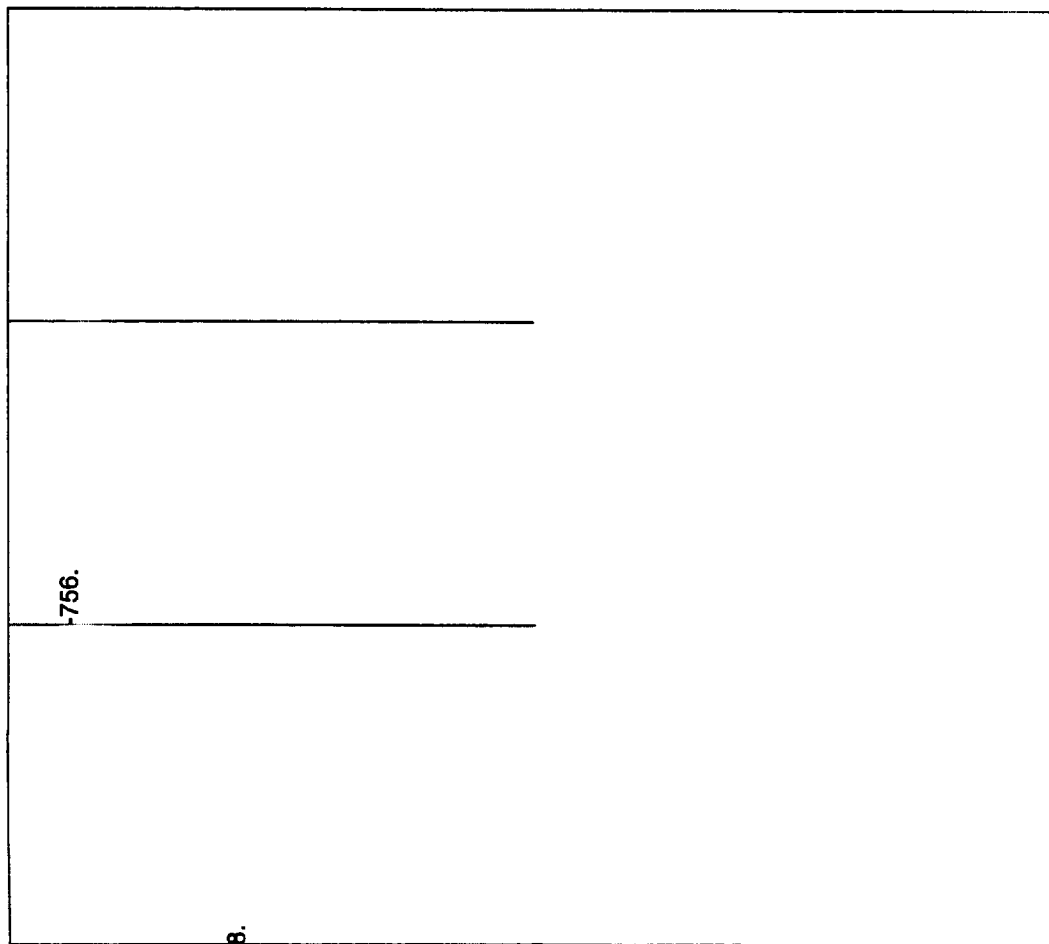


Metsat AMSU-A1
Upper Aft Panel



FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:49:51

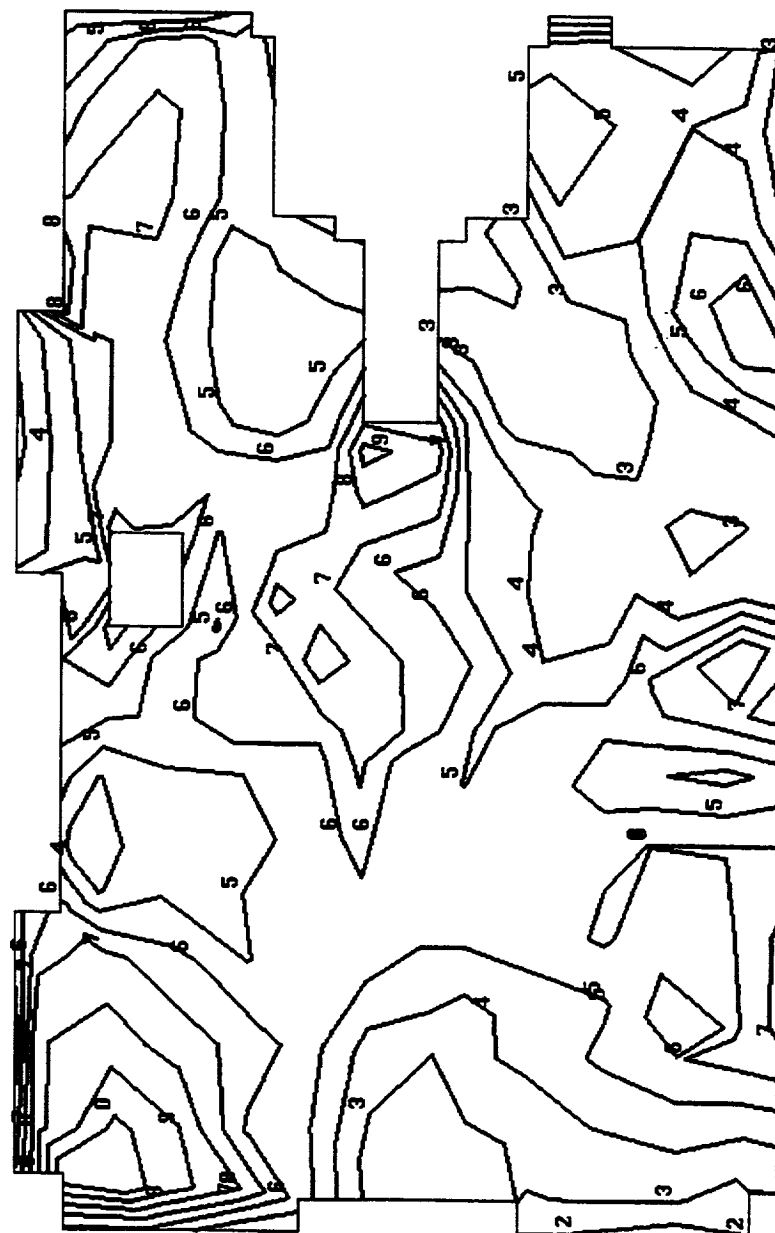
Upper Aft Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

8.
-43.
-94.
-145.
-196.
-247.
-298.
-349.
-400.
-451.
-502.
-552.
-603.
-654.
-705.
-756.

Metsat AMSU-A1
Lower Shelf



Time: 16:15:16
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.419E+04
1	0.377E+04
2	0.334E+04
3	0.291E+04
4	0.248E+04
5	0.206E+04
6	0.163E+04
7	0.120E+04
8	0.776E+03
9	0.349E+03

Min = 3.489706E+02

Max = 4.620280E+03

Min ID= 1725

Max ID= 1841

Contour_9:

Stress Tensor

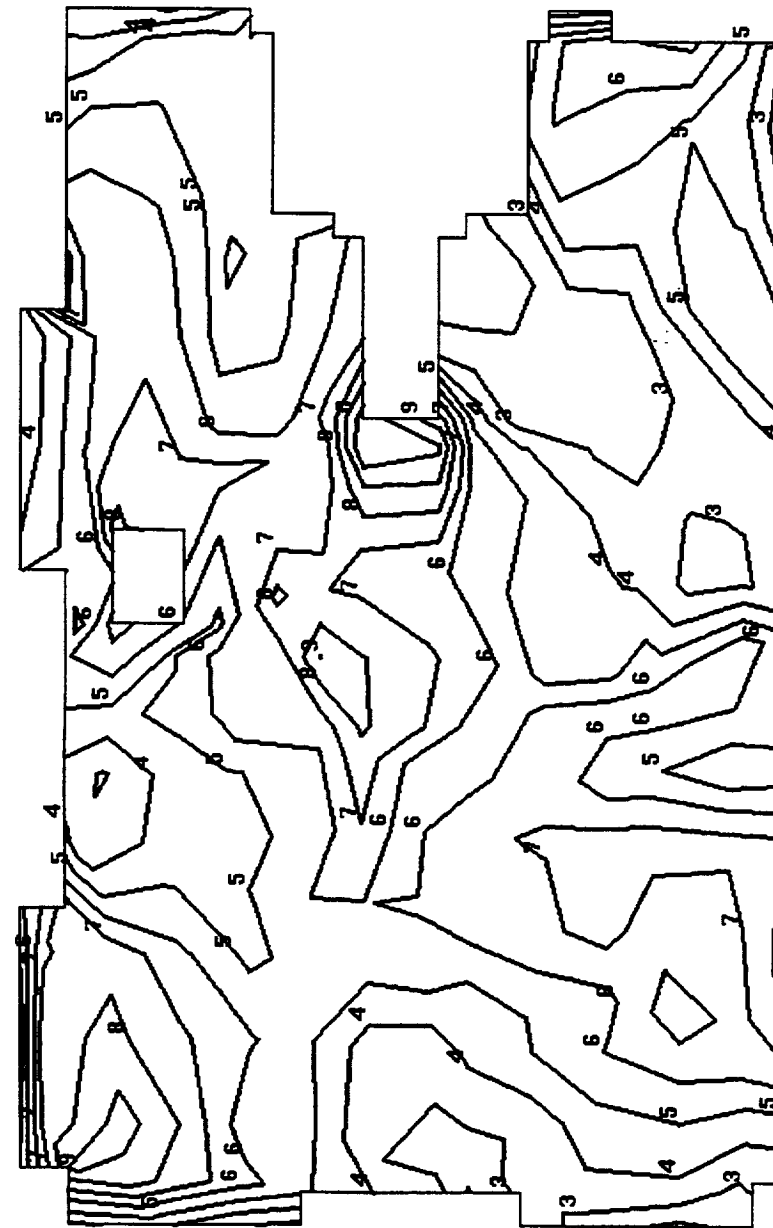
von Mises

At 21

Design_Qy=-20.6_Qz=-19.6
Static Subcase

Time: 16:14:01
Date: 02/29/96

Metsat AMSU-A1
Lower Shelf



Contour
Node Scalar1

Color Index

—	0	0.403E+04
—	9	0.362E+04
—	8	0.322E+04
—	7	0.282E+04
—	6	0.241E+04
—	5	0.201E+04
—	4	0.161E+04
—	3	0.120E+04
—	2	0.798E+03
—	1	0.395E+03

Min = 3.950688E+02

Max = 4.429635E+03

Min ID= 1741

Max ID= 1753

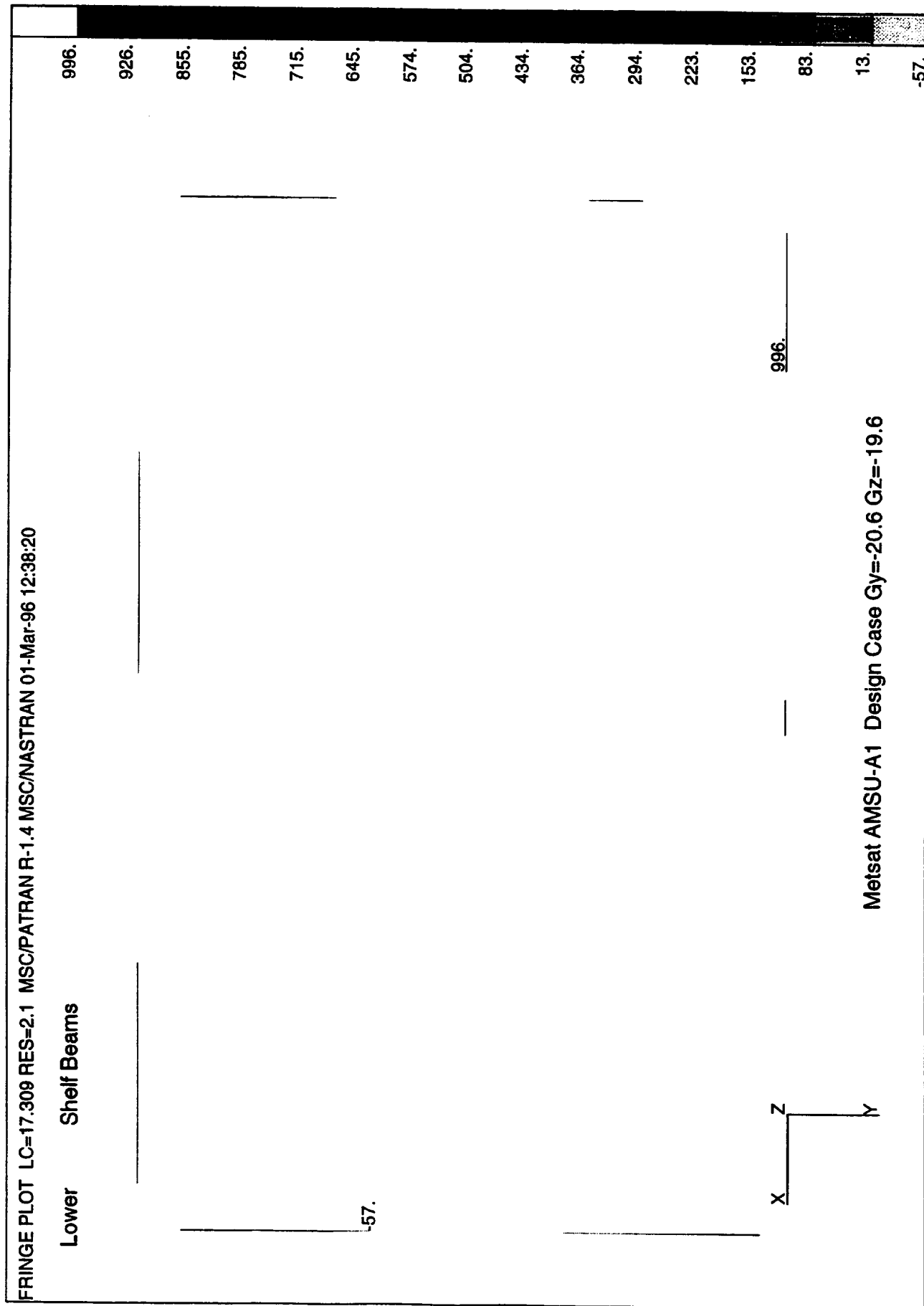
Contour_10:

Stress Tensor

Von Mises

At Z2

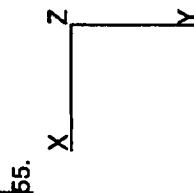
Design_Oy=-20.6_Oz=-19.6
Static Subcase



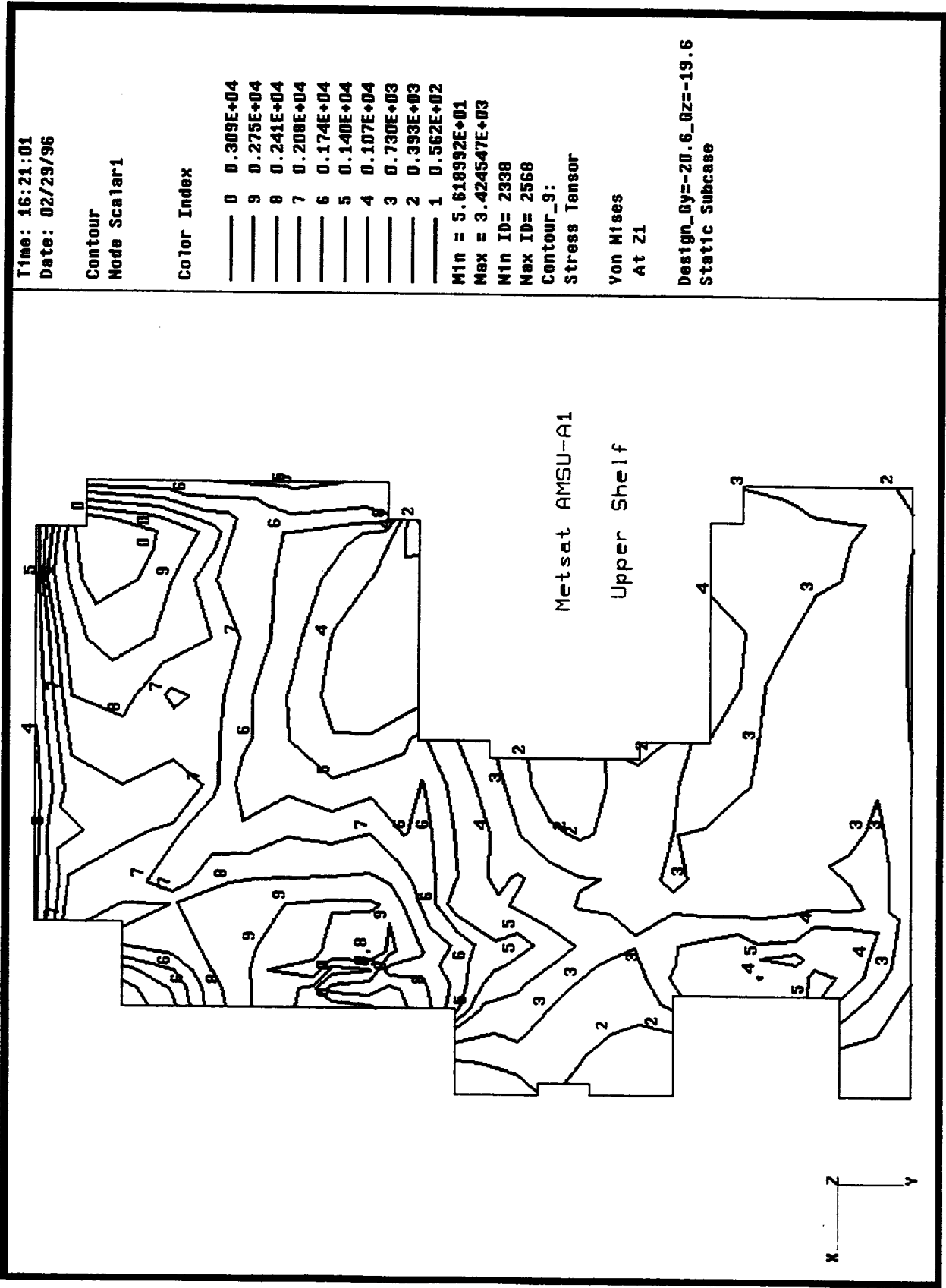
FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:38:27

Lower Shelf Beams

55.
-54.
-163.
-272.
-381.
-490.
-599.
-708.
-817.
-926.
-1036.
-1145.
-1254.
-1363.
-1472.
-1581.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6



Time: 16:21:20
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.326E+04
9	0.290E+04
8	0.255E+04
7	0.219E+04
6	0.184E+04
5	0.148E+04
4	0.112E+04
3	0.766E+03
2	0.409E+03
1	0.530E+02

Min = 5.301788E+01

Max = 3.617593E+03

Min ID= 2338

Max ID= 2452

Contour_10:

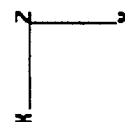
Stress Tensor

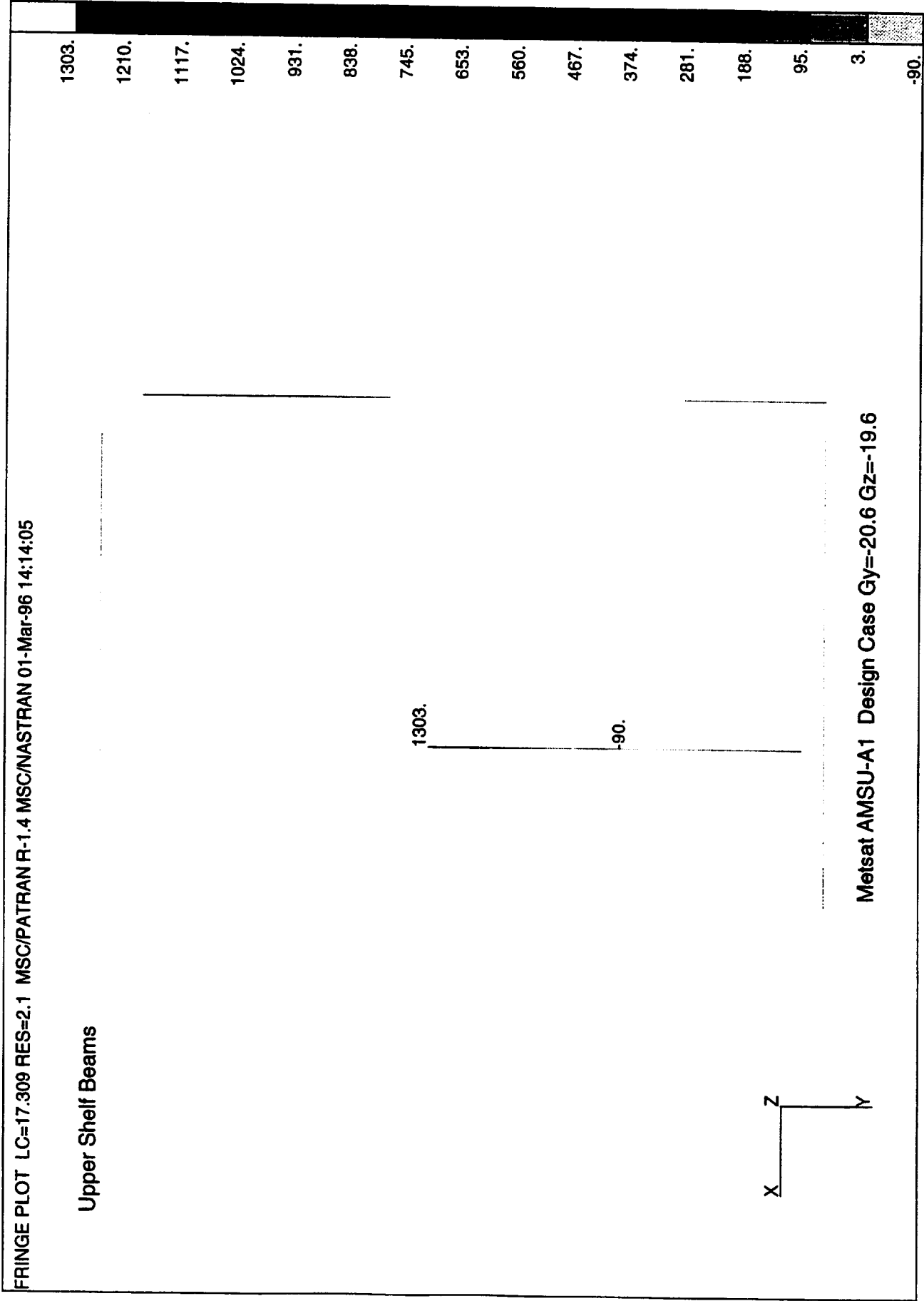
Von Mises

At 22

Design_0y=-20.6_0z=-19.6

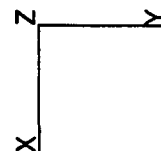
Static Subcase





FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:14:10

Upper Shelf Beams

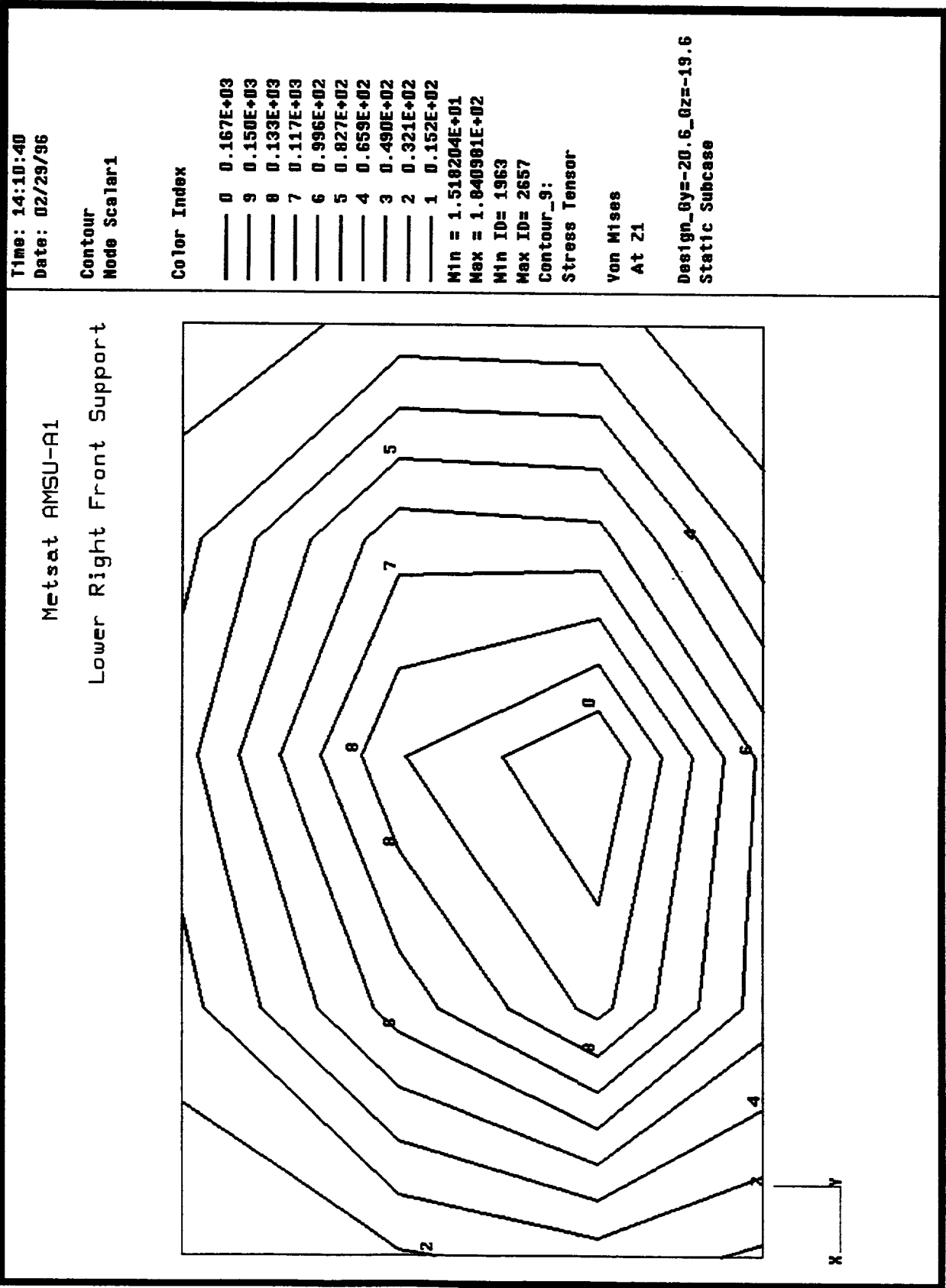


-826.

98.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

98.
36.
-25.
-87.
-148.
-210.
-272.
-333.
-395.
-456.
-518.
-580.
-641.
-703.
-764.
-826.



Time: 14:21:31
Date: 02/29/96

Metsat AMSU-A1

Lower Right Front Support

Contour
Node Scalar1

Color Index	0	0.170E+03
	9	0.153E+03
	8	0.136E+03
	7	0.119E+03
	6	0.102E+03
	5	0.850E+02
	4	0.679E+02
	3	0.508E+02
	2	0.337E+02
	1	0.166E+02

Min = 1.663225E+01
Max = 1.875851E+02

Min ID= 2663

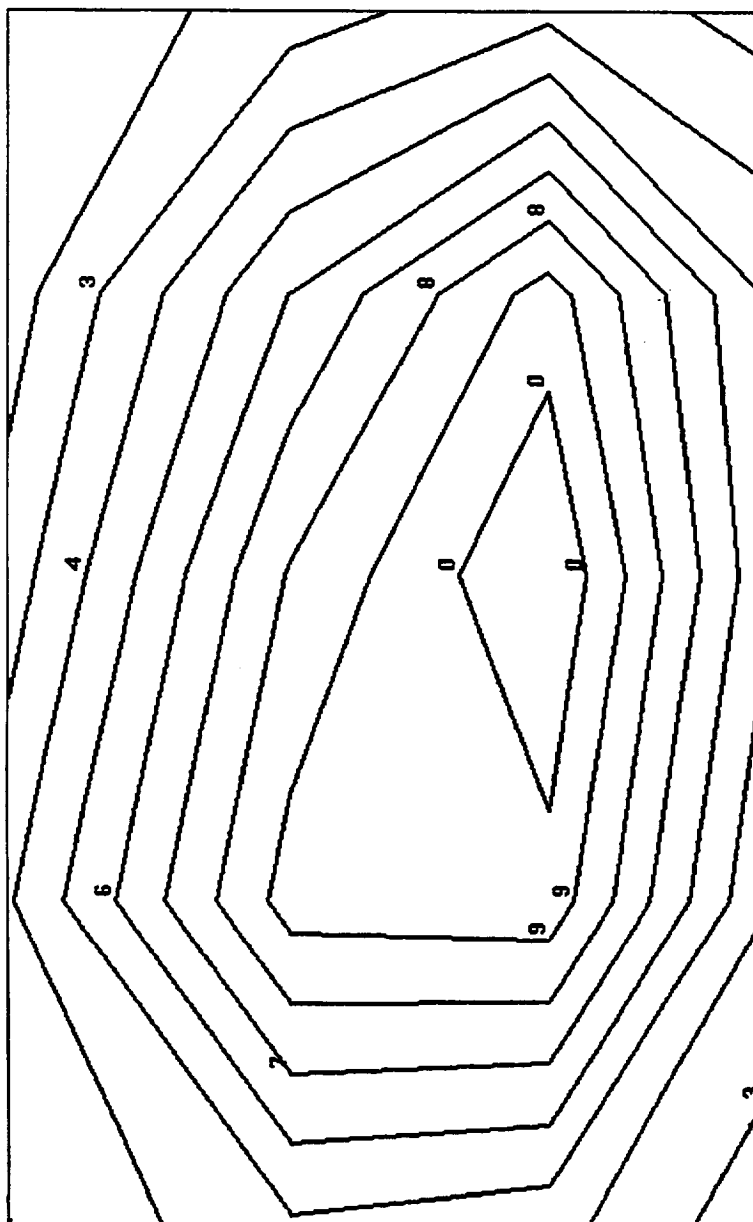
Max ID= 2657

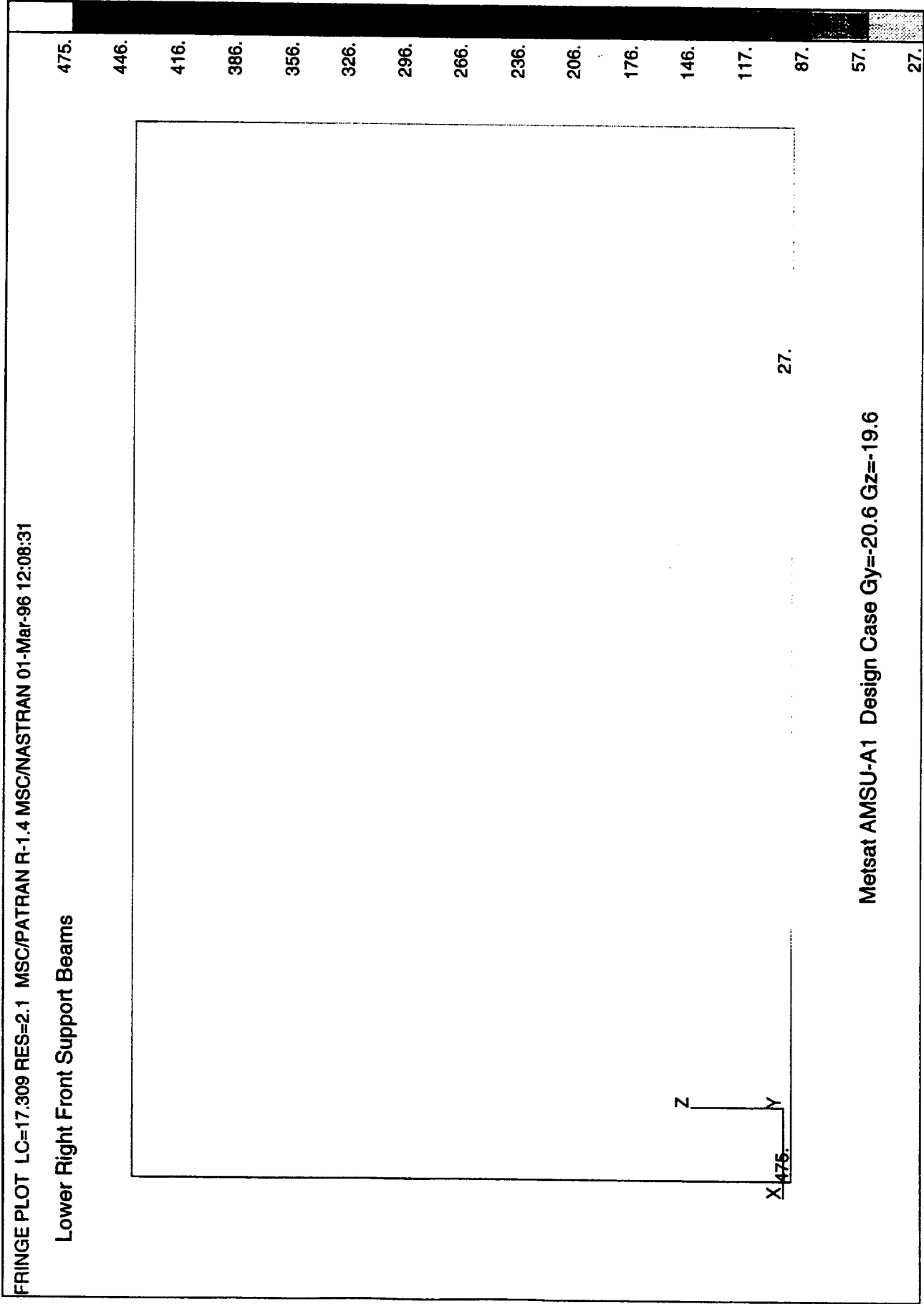
Contour_ID:

Stress Tensor

Von Mises
At 22

Design_Qy=-20.6_Qz=-19.6
Static Subcase





FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:08:39

Lower Right Front Support Beams

64.
31.
-2.
-35.
-68.
-101.
-134.
-167.
-200.
-233.
-266.
-299.
-332.
-365.
-398.
-431.

64.

X 431.
Z
Y

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Time: 13:59:37
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.140E+04
1	0.125E+04
2	0.110E+04
3	0.944E+03
4	0.791E+03
5	0.638E+03
6	0.485E+03
7	0.332E+03
8	0.179E+03
9	0.260E+02

Min = 2.603584E+01

Max = 1.555321E+03

Min ID= 1455

Max ID= 1379

Contour_9:

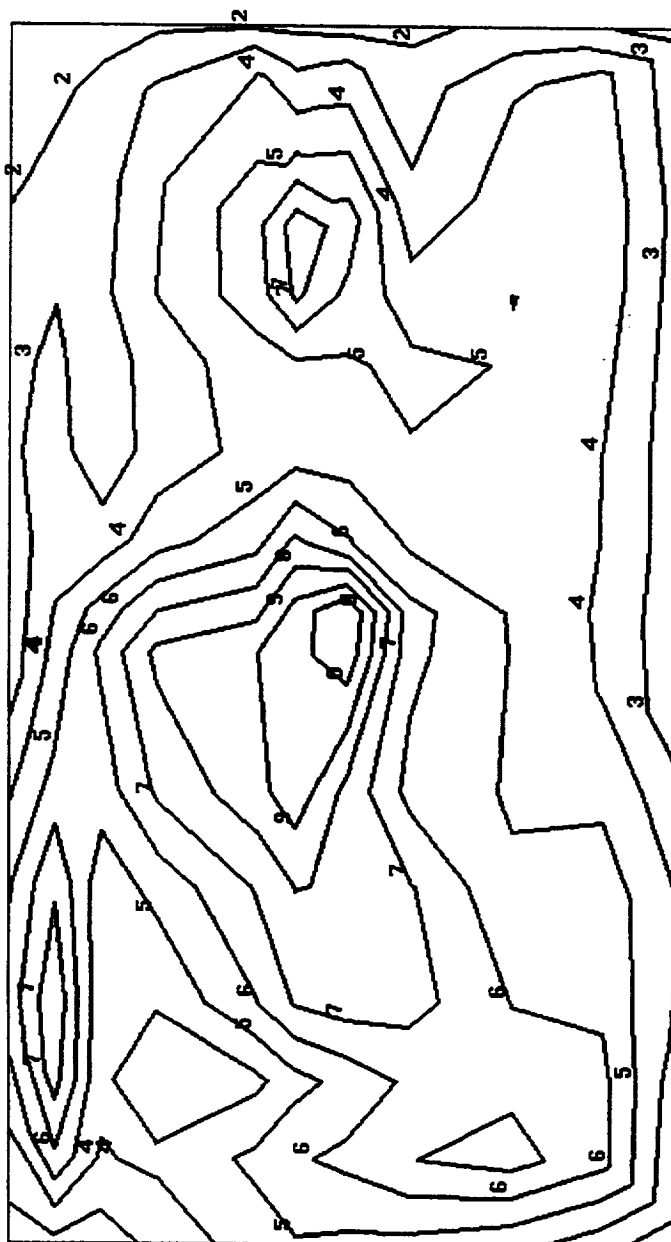
Stress Tensor

Von Mises

At 21

Design_By=-20.6_0z=-19.6
Static Subcase

Metsat AMSU-A1
Lower Right Panel



X
Y

Time: 13:57:19
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.133E+04
—	9	0.119E+04
—	8	0.105E+04
—	7	0.914E+03
—	6	0.774E+03
—	5	0.634E+03
—	4	0.494E+03
—	3	0.354E+03
—	2	0.213E+03
—	1	0.732E+02

Min = 7.316010E+01

Max = 1.475173E+03

Min ID= 1205

Max ID= 1379

Contour_ID:

Stress Tensor

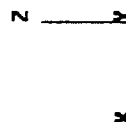
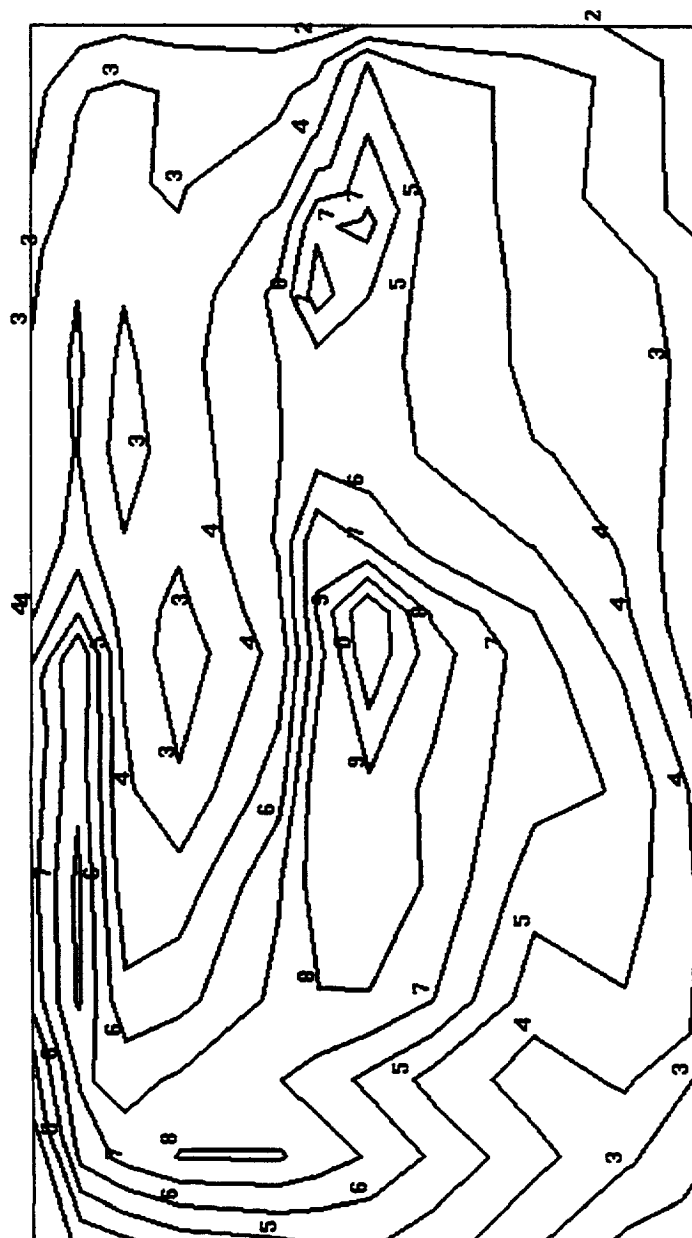
Von Mises

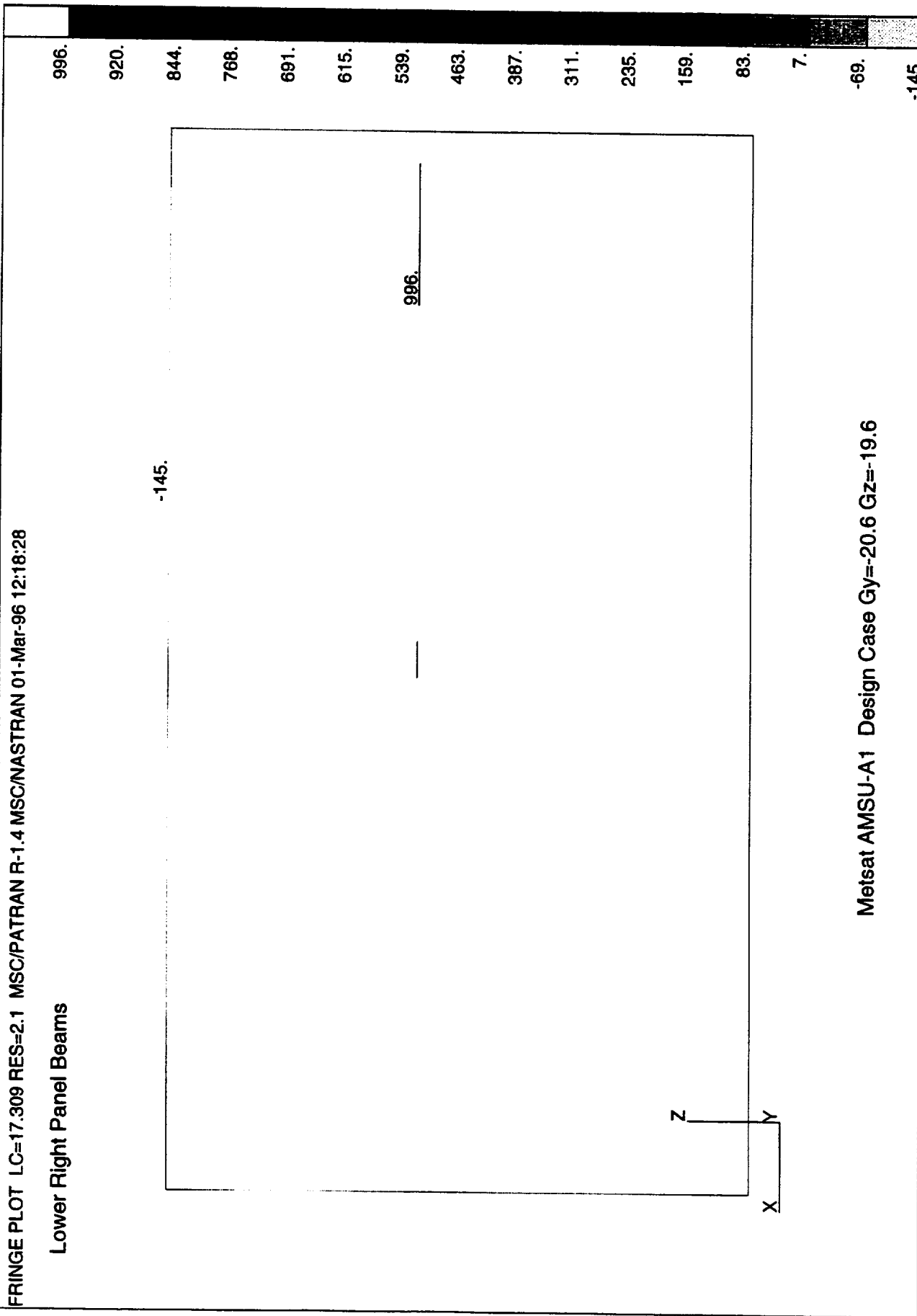
At 22

Design_Qy=-20.6_Qz=-19.6
Static Subcase

Metsat AMSU-A1

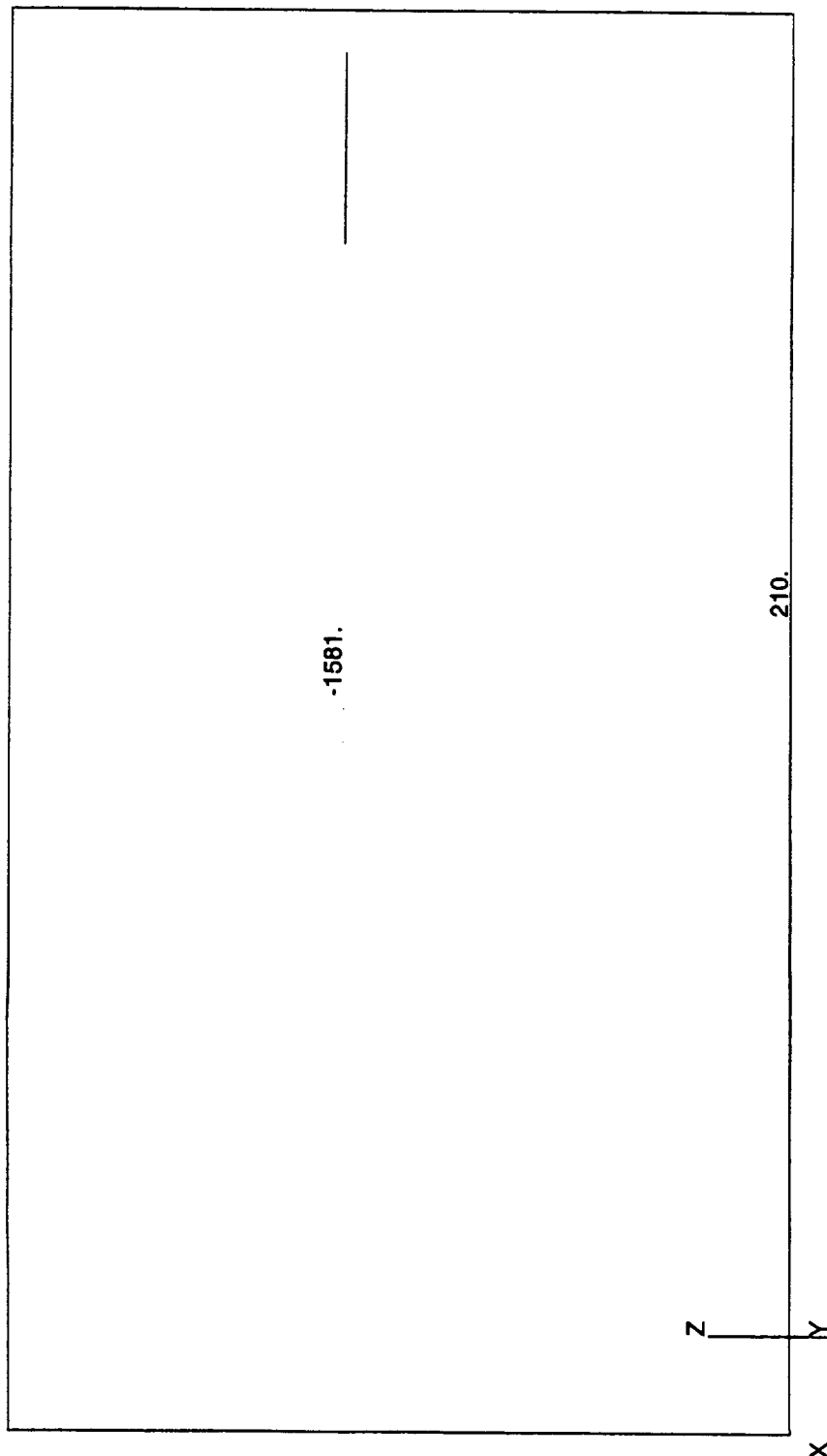
Lower Right Panel





FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:18:36

Lower Right Panel Beams



210.
90.
-29.
-149.
-268.
-387.
-507.
-626.
-745.
-865.
-984.
-1103.
-1223.
-1342.
-1461.
-1581.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Time: 14:33:40
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.248E+03
1	0.227E+03
2	0.207E+03
3	0.186E+03
4	0.166E+03
5	0.145E+03
6	0.124E+03
7	0.104E+03
8	0.832E+02
9	0.626E+02

Min = 6.257602E+01

Max = 2.684757E+02

Min ID= 2689

Max ID= 2682

Contour_9:

Stress Tensor

Von Mises

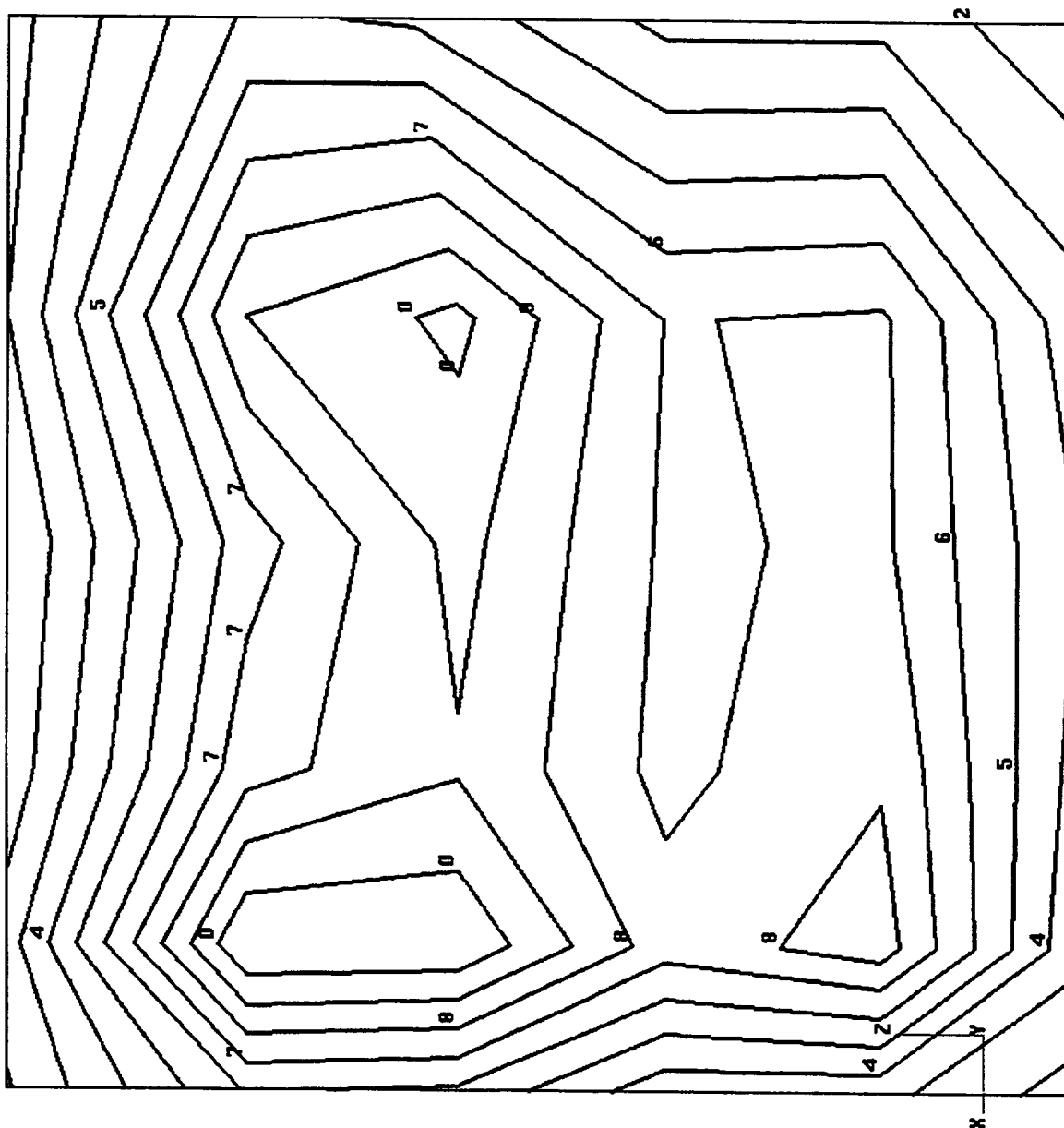
At Z1

Design_By=-20.6_Gz=-19.6
Static Subcase

Metsat AMSU-A1

Upper Right

Front Support



Time: 14:34:10
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.278E+03
1	0.253E+03
2	0.228E+03
3	0.203E+03
4	0.178E+03
5	0.154E+03
6	0.129E+03
7	0.104E+03
8	0.793E+02
9	0.545E+02

Min = 5.448947E+01

Max = 3.025117E+02

Min ID= 1519

Max ID= 2679

Contour_10:

Stress Tensor

Von Mises

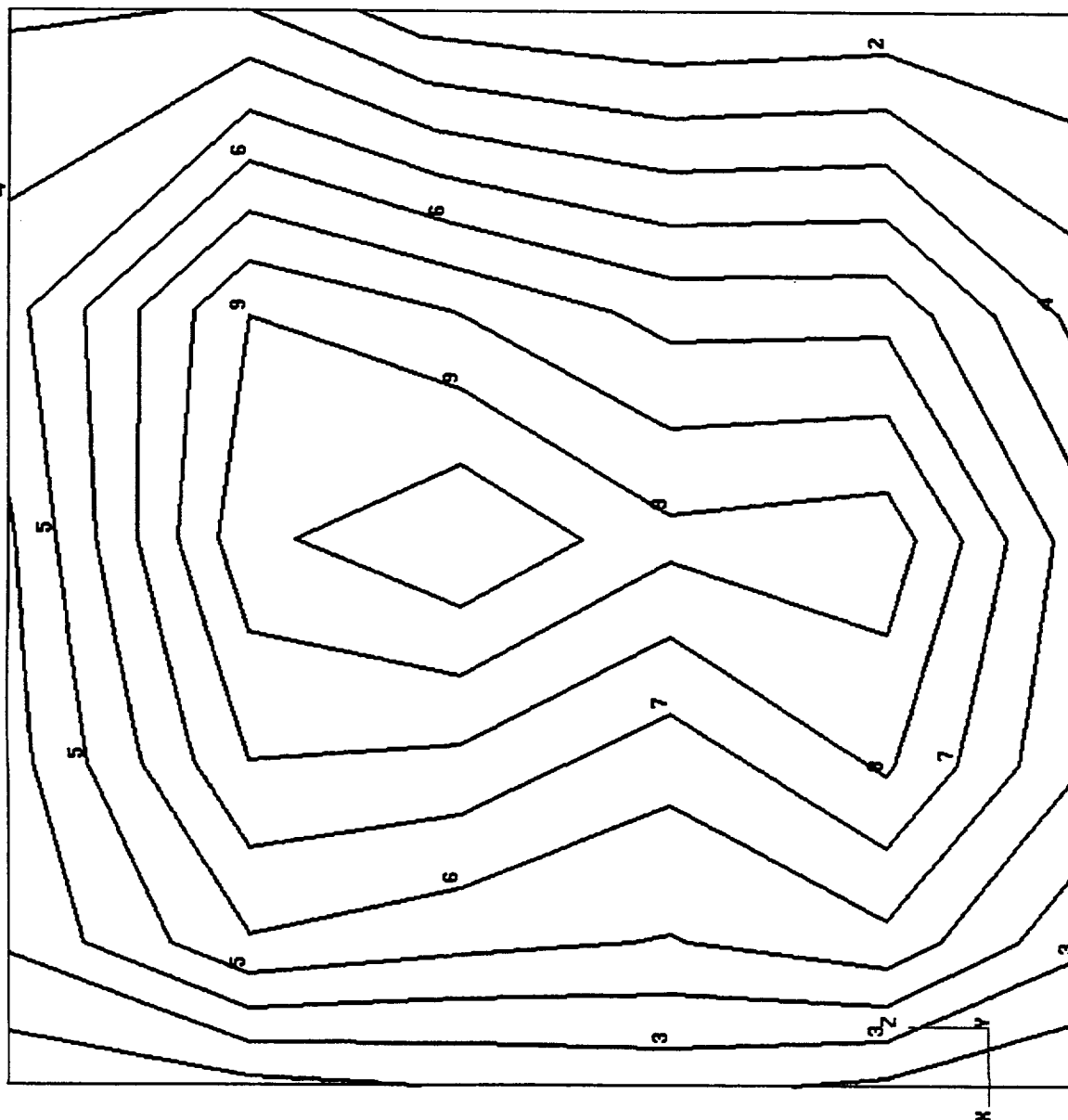
At 22

Design_Gy=-20.6_Qz=-19.6
Static Subcase

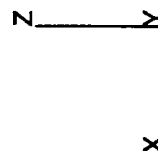
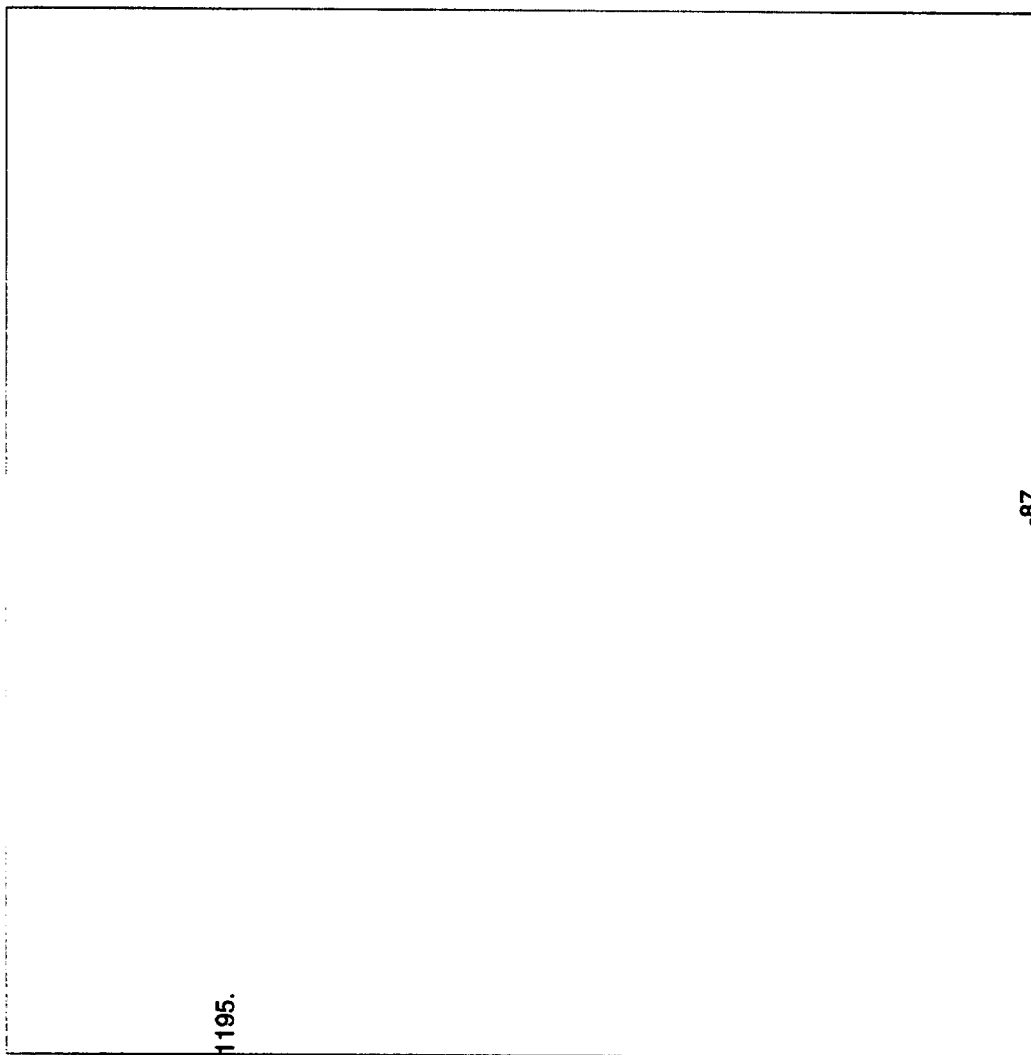
Metsat AMSU-A1

Upper Right

Front Support



FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:24:05
Upper Right Front Support Beams

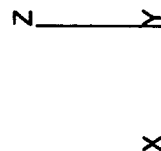
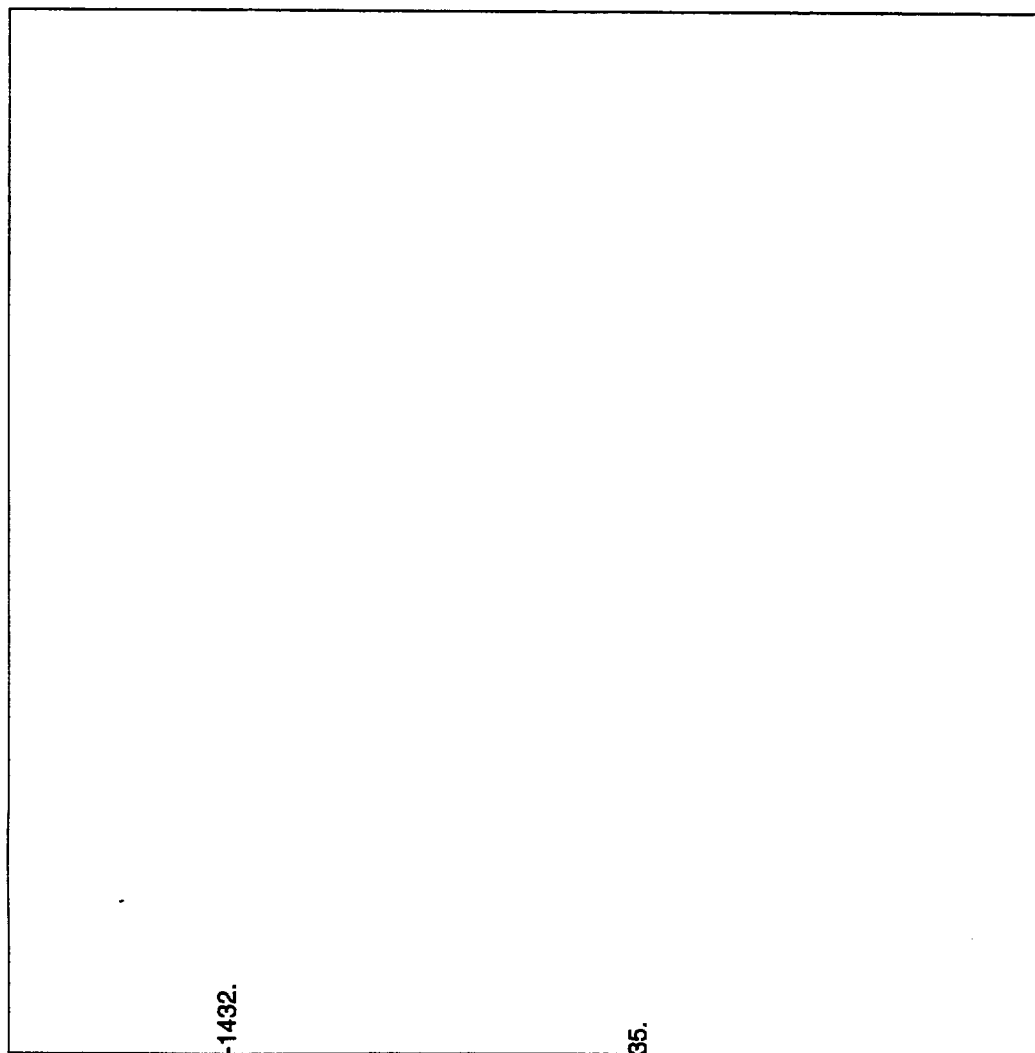


-87.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

1195.
1109.
1024.
938.
853.
767.
682.
597.
511.
426.
340.
255.
169.
84.
-2.
-87.

FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:24:10
Upper Right Front Support Beams



35.
-63.
-161.
-259.
-356.
-454.
-552.
-650.
-748.
-845.
-943.
-1041.
-1139.
-1237.
-1335.
-1432.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Time: 14:40:50
Date: 02/29/96

Contour
Mode Scalar1

Color Index	
0	0.759E+03
1	0.686E+03
2	0.614E+03
3	0.542E+03
4	0.470E+03
5	0.398E+03
6	0.325E+03
7	0.253E+03
8	0.181E+03
9	0.109E+03

Min = 1.088084E+02

Max = 8.308289E+02

Min ID= 1458

Max ID= 2166

Contour_9:

Stress Tensor

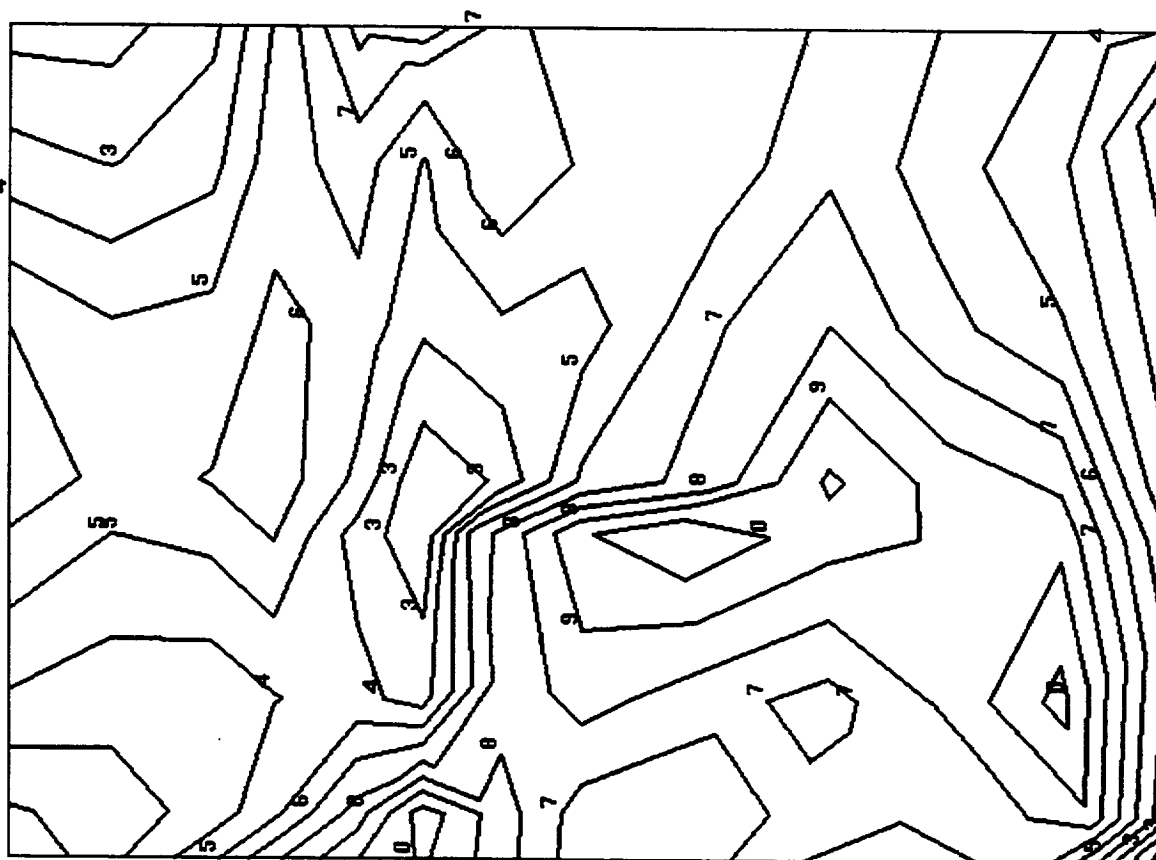
Von Mises

At 21

Design_0y=-20.6_0z=-19.6
Static Subcase

Metsat AMSU-A1

Upper Right Panel



Time: 14:40:10
Date: 02/29/96

Contour
Node Scalar1

Color Index

— 0	0.777E+03
— 9	0.702E+03
— 8	0.628E+03
— 7	0.553E+03
— 6	0.479E+03
— 5	0.404E+03
— 4	0.330E+03
— 3	0.255E+03
— 2	0.181E+03
— 1	0.106E+03

Min = 1.061205E+02
Max = 8.514751E+02

Min ID= 2210

Max ID= 2165

Contour_10:

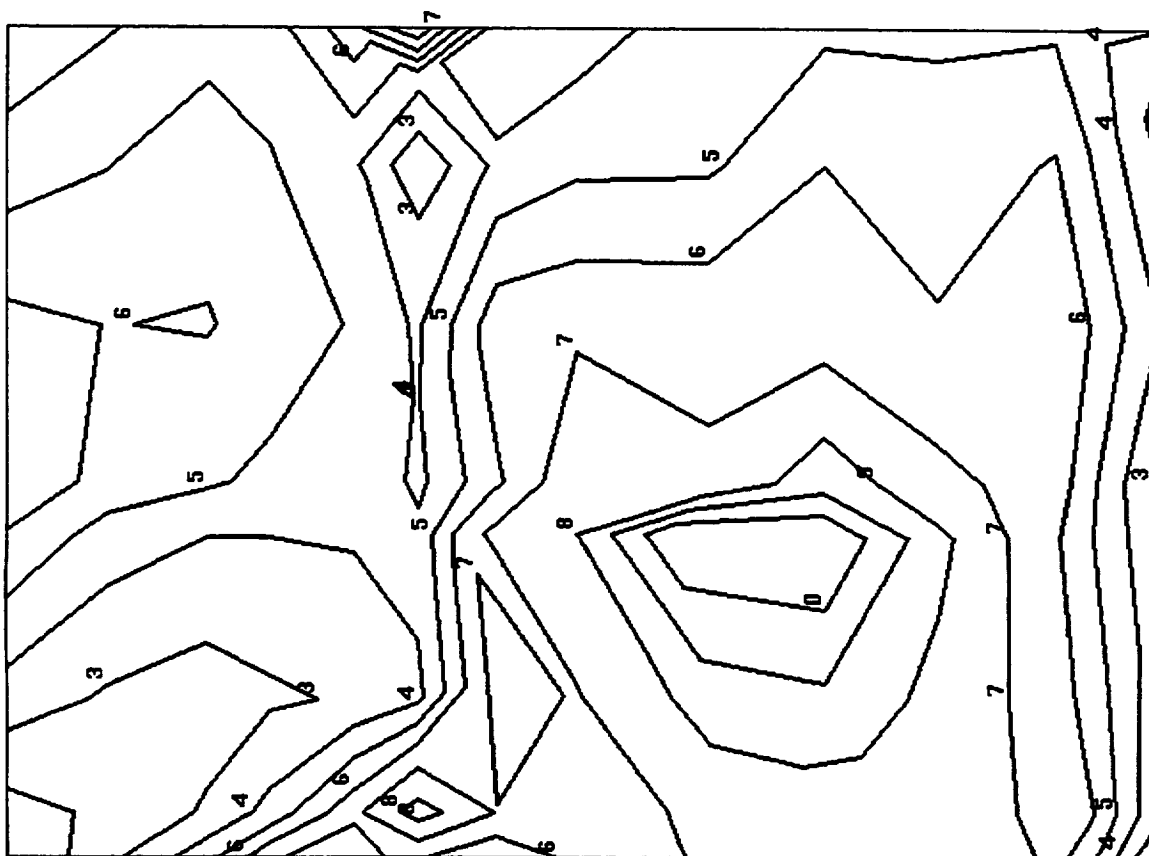
Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0z=-19.6
Static Subcase

Metsat AMSU-A1

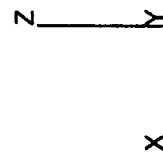
Upper Right Panel



Y
X

FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:19:38

Upper Right Panel Beams



316.

-36.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

316.

293.

269.

246.

222.

199.

175.

152.

129.

105.

82.

58.

35.

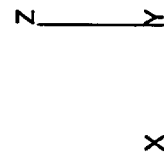
11.

-12.

-36.

FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:19:50

Upper Right Panel Beams

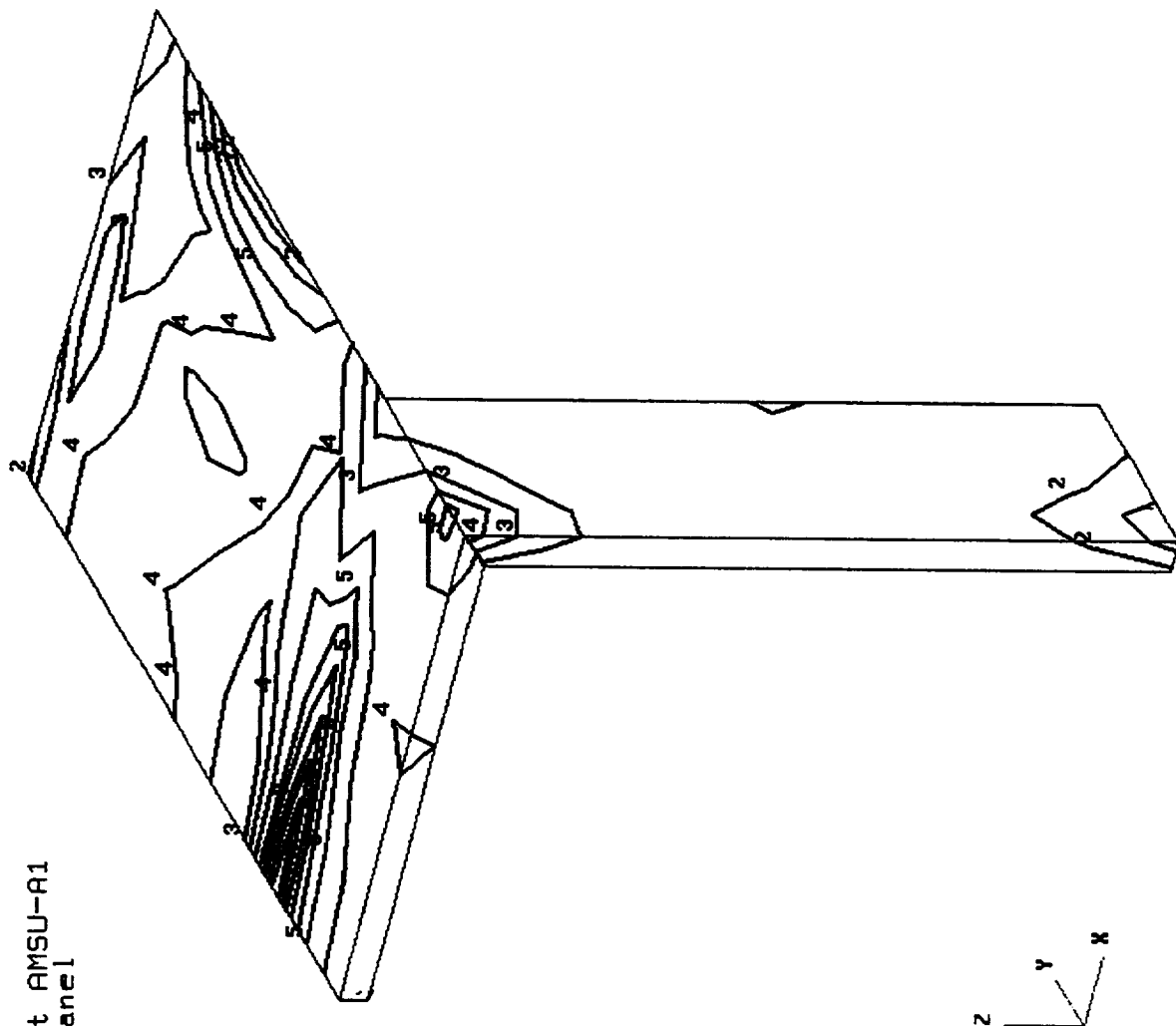


.0000000000
-46.
-92.
-138.
-184.
-230.
-276.
-322.
-368.
-414.
-461.
-507.
-553.
-599.
-645.
-691.

.0000000000 -691.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Metsat AMSU-A1
Top Panel



Time: 10:50:29
Date: 02/29/96

Contour
Mode Scalar1

Color Index	
0	0.146E+04
9	0.130E+04
8	0.114E+04
7	0.984E+03
6	0.826E+03
5	0.669E+03
4	0.511E+03
3	0.353E+03
2	0.195E+03
1	0.367E+02

Min = 3.669931E+01

Max = 1.616277E+03

Min ID= 2210

Max ID= 11021

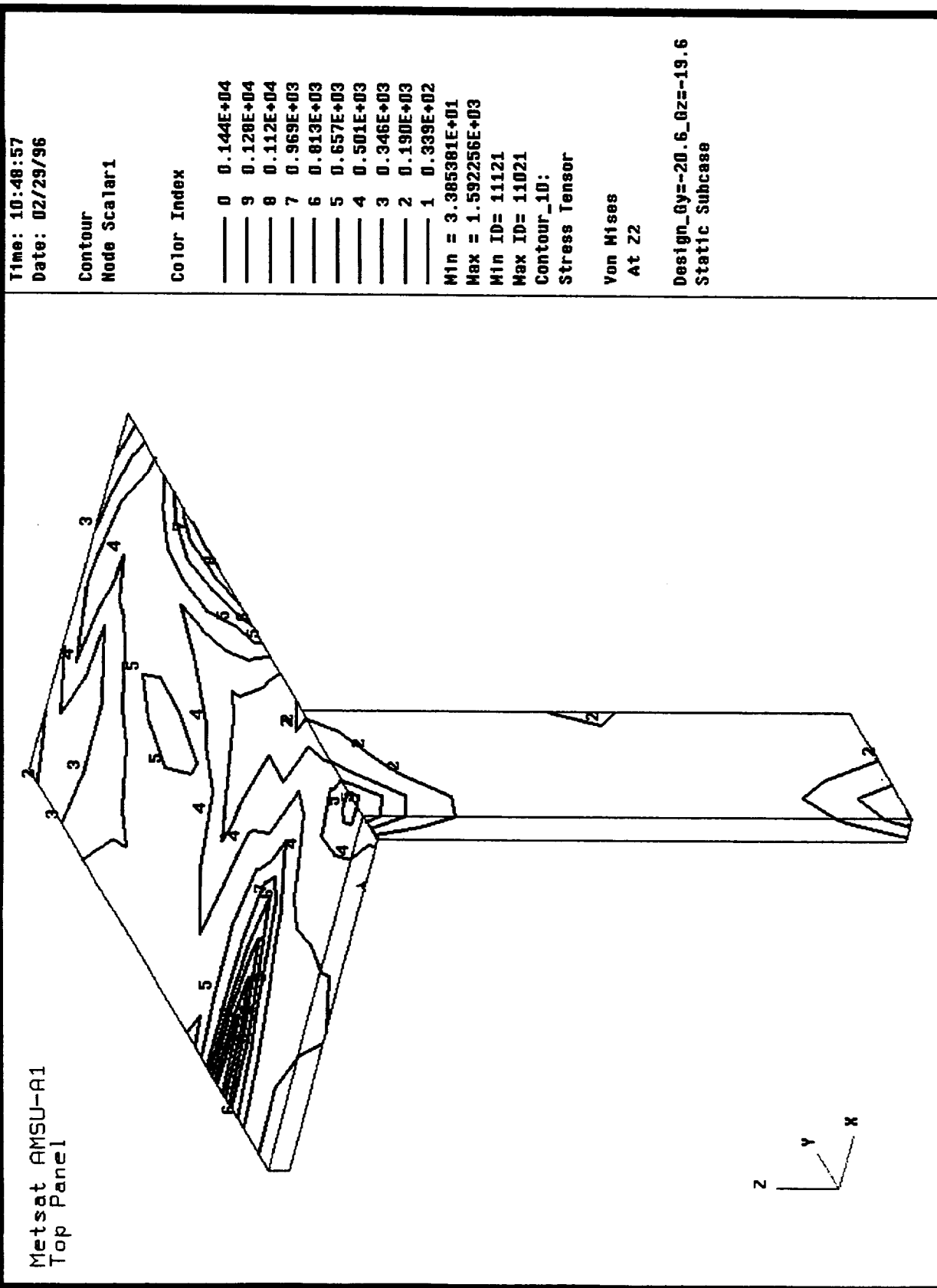
Contour_9:

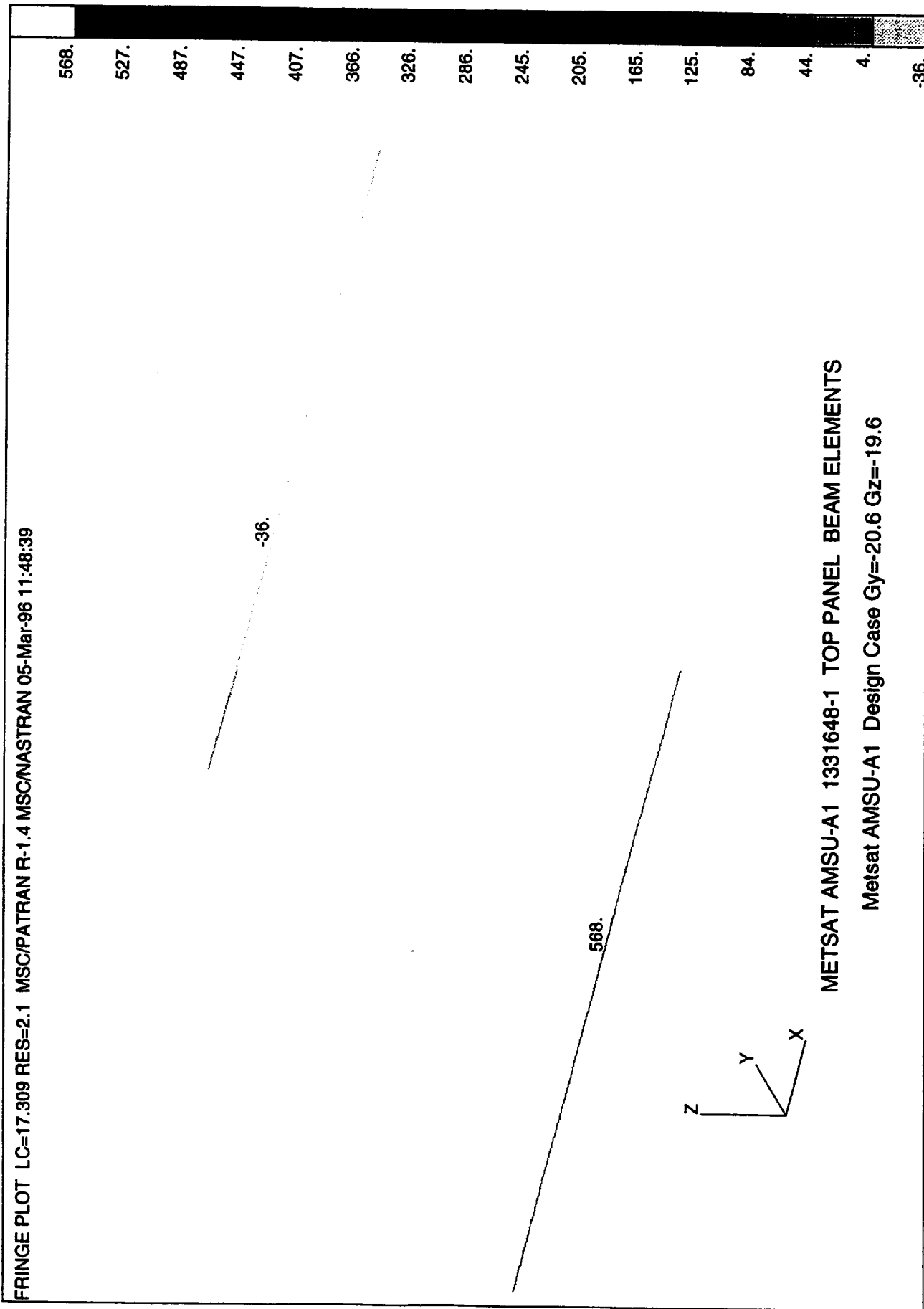
Stress Tensor

Von Mises

At 21

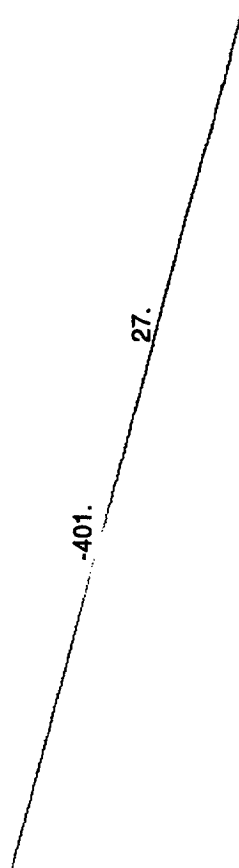
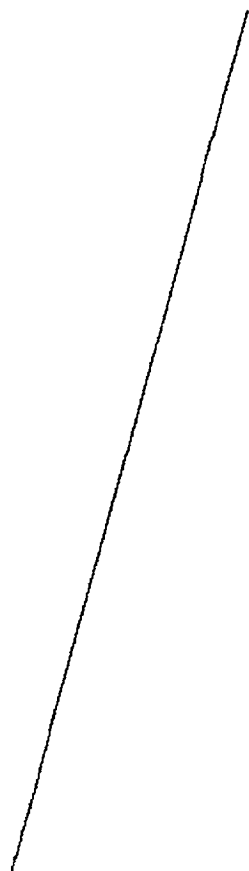
Design_Gy=-20.6_Gz=-19.6
Static Subcase





FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:53:57

27.
-2.
-30.
-59.
-87.
-116.
-144.
-173.
-201.
-230.
-258.
-287.
-315.
-344.
-372.
-401.



METSAT AMSU-A1 1331648-1 TOP PANEL BEAM ELEMENTS

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Time: 13:56:10
Date: 02/29/96

Contour
Node Scalar1

Color Index

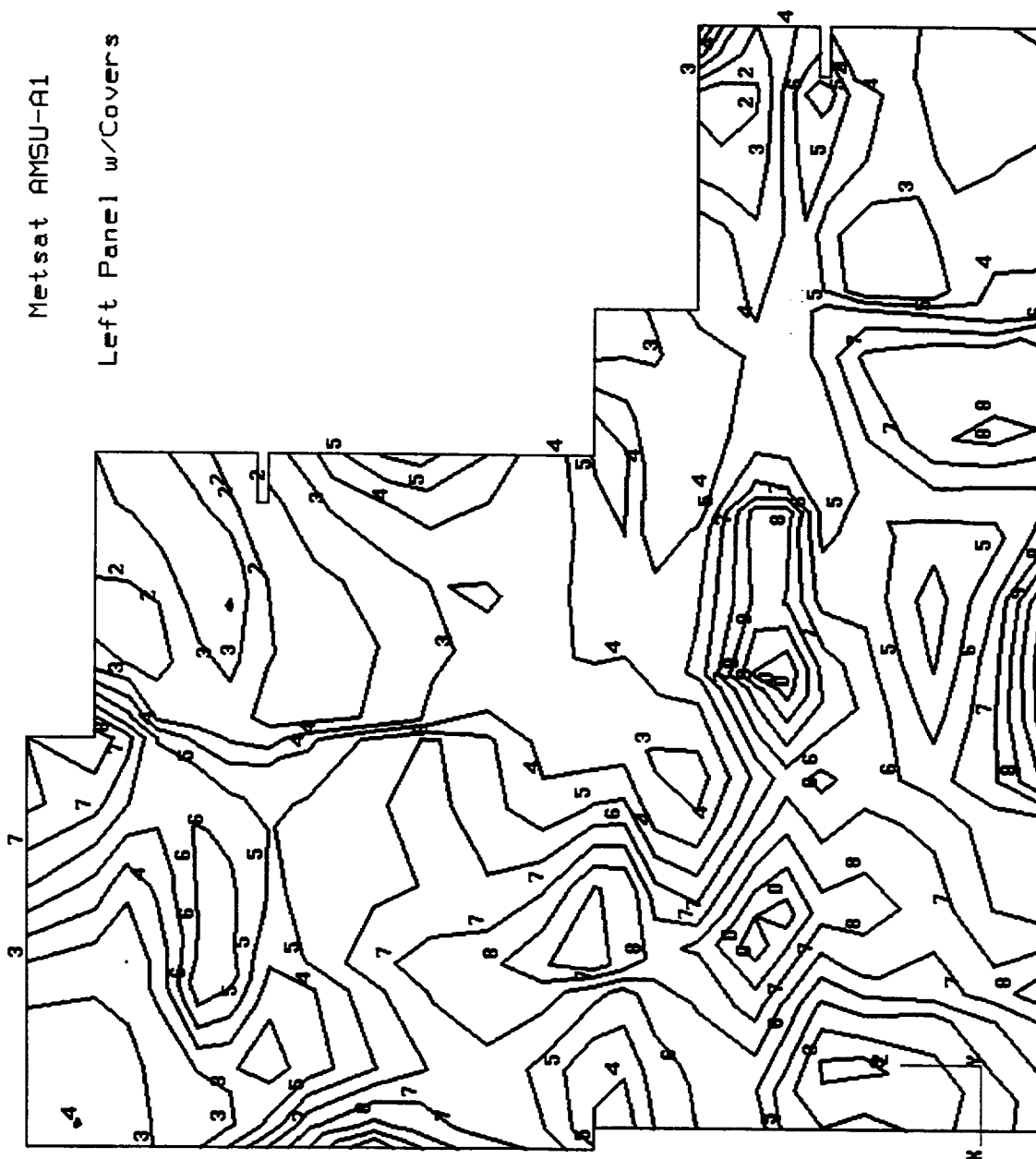
—	0	0.914E+03
—	9	0.823E+03
—	8	0.732E+03
—	7	0.641E+03
—	6	0.550E+03
—	5	0.459E+03
—	4	0.368E+03
—	3	0.277E+03
—	2	0.186E+03
—	1	0.955E+02

Min = 9.547839E+01
Max = 1.005402E+03
Min ID= 3061
Max ID= 2232
Contour_9:
Stress Tensor

Von Mises
At Z1

Design_By=-20.6_0z=-19.6
Static Subcase

Metsat AMSU-A1
Left Panel w/Covers



Time: 13:56:40
Date: 02/29/96

Contour
Node Scalar1

Color Index

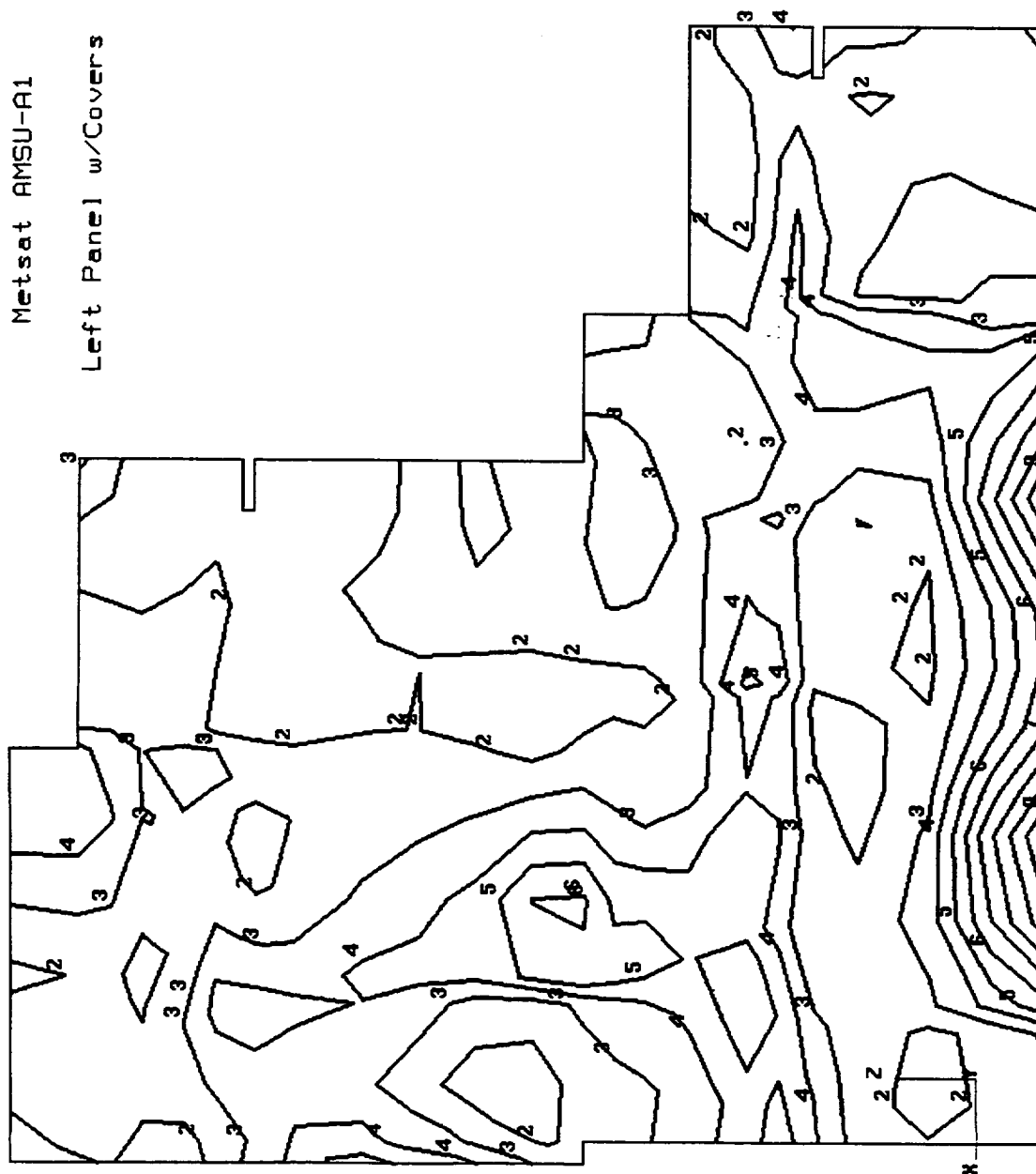
0	0.152E+04
9	0.136E+04
8	0.121E+04
7	0.105E+04
6	0.897E+03
5	0.742E+03
4	0.587E+03
3	0.431E+03
2	0.276E+03
1	0.121E+03

Min = 1.213789E+02
Max = 1.671815E+03
Min ID= 3213
Max ID= 1014
Contour_ID:
Stress Tensor

Von Mises
At 22

Design_Oy=-20.6_Oz=-19.6
Static Subcase

Metsat AMSU-A1
Left Panel w/Covers



Time: 16:49:10
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.601E+03
9	0.535E+03
8	0.470E+03
7	0.404E+03
6	0.339E+03
5	0.274E+03
4	0.208E+03
3	0.143E+03
2	0.775E+02
1	0.121E+02

Min = 1.212491E+01

Max = 6.660575E+02

Min ID= 2663

Max ID= 2914

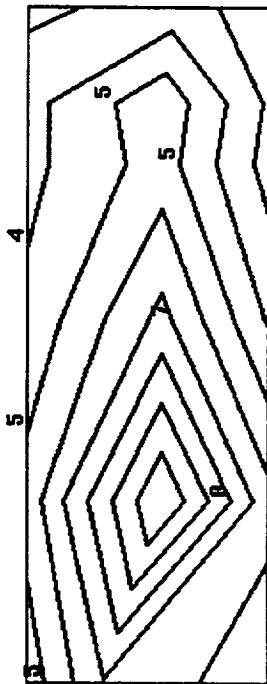
Contour_9:

Stress Tensor

Von Mises

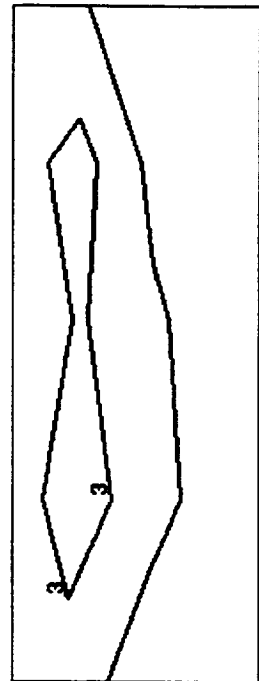
At 21

Design_Oy=-20.6_Oz=-19.6
Static Subcase

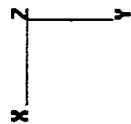


Lower Left

Metsat AMSU-A1
Shields



Lower Right



Time: 16:49:35
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.510E+03
9	0.455E+03
8	0.400E+03
7	0.344E+03
6	0.289E+03
5	0.234E+03
4	0.178E+03
3	0.123E+03
2	0.675E+02
1	0.122E+02

Min = 1.219587E+01

Max = 5.656769E+02

Min ID= 2663

Max ID= 2914

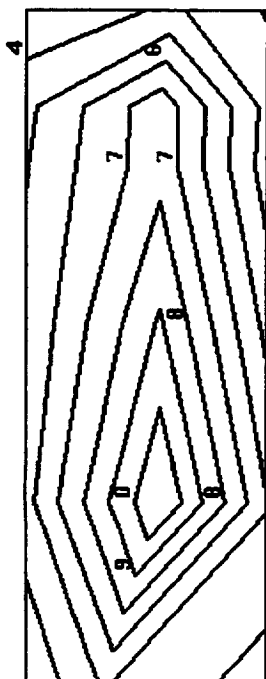
Contour_10:

Stress Tensor

Von Mises

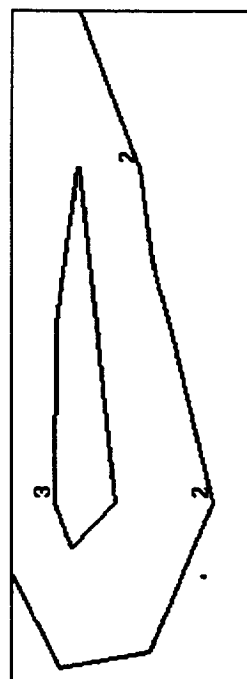
At Z2

Design_Oy=-20.6_Oz=-19.6
Static Subcase

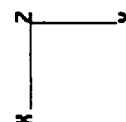


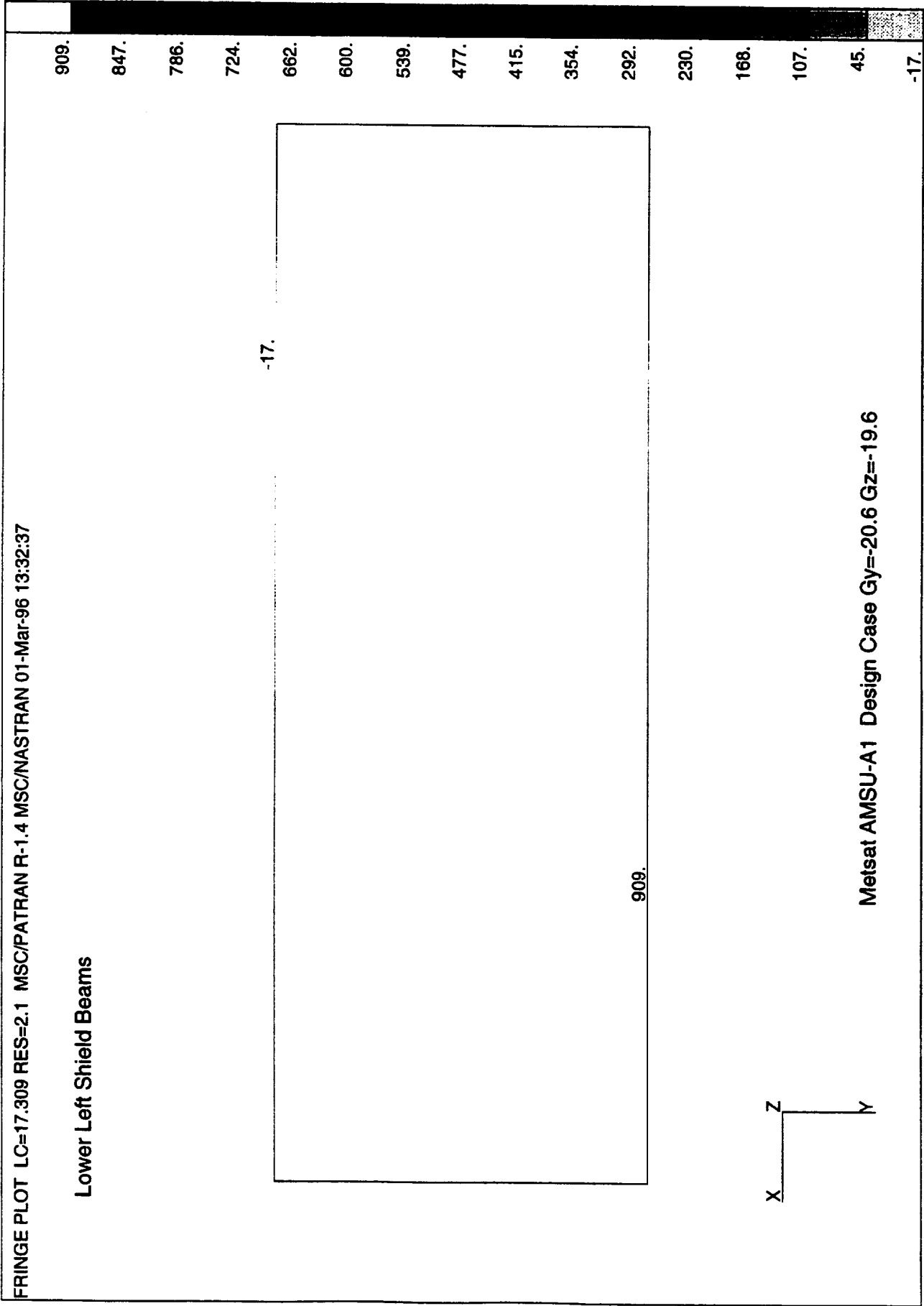
Lower Left

Metsat AMSU-A1
Shields



Lower Right



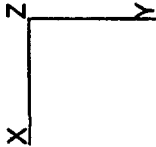


FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:32:47

Lower Left Shield Beams

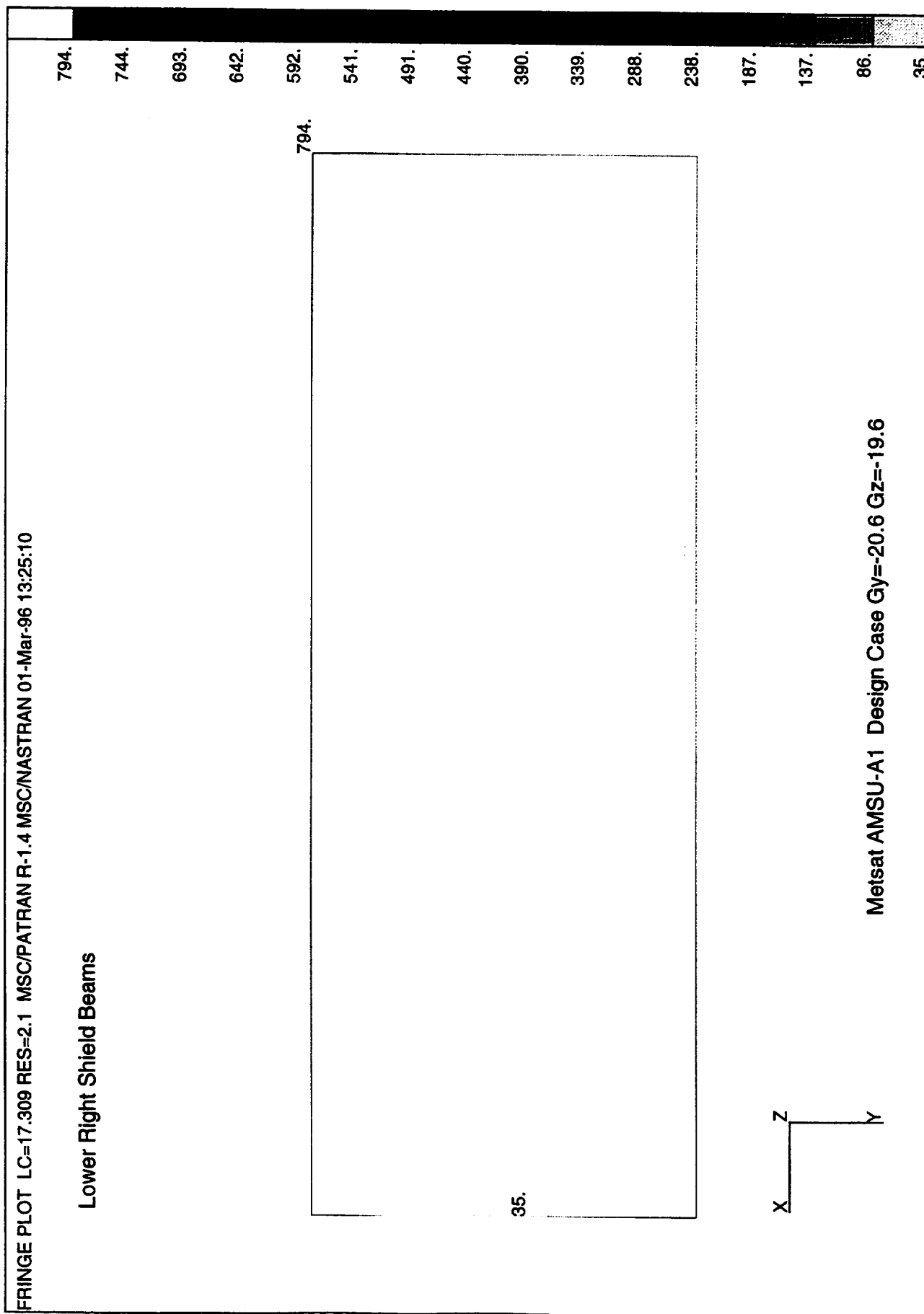
-205.

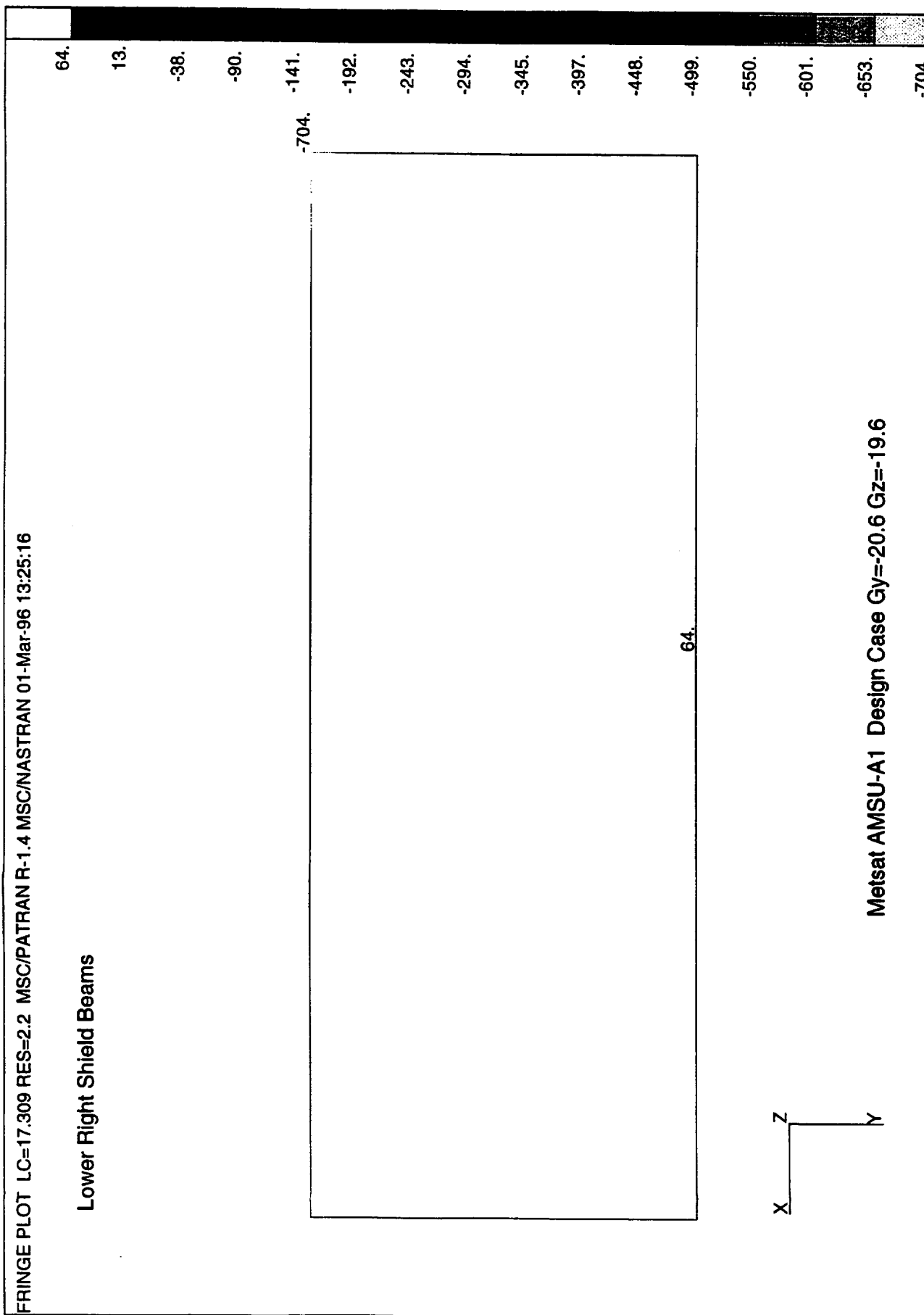
-712.

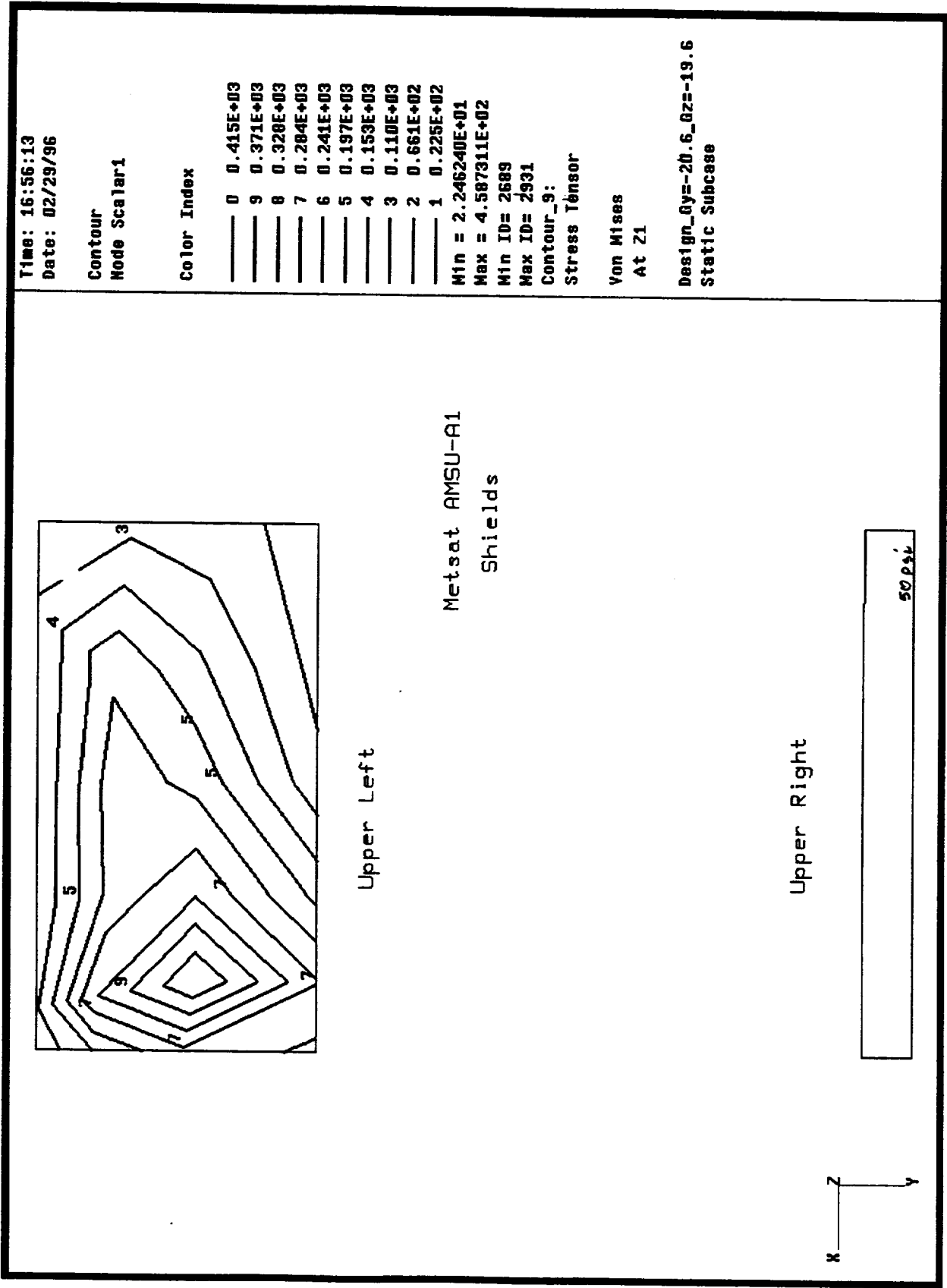


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

-205.
-239.
-273.
-306.
-340.
-374.
-408.
-441.
-475.
-509.
-543.
-577.
-610.
-644.
-678.
-712.







Time: 16:56:35
Date: 02/29/96

Contour
Node Scalar1

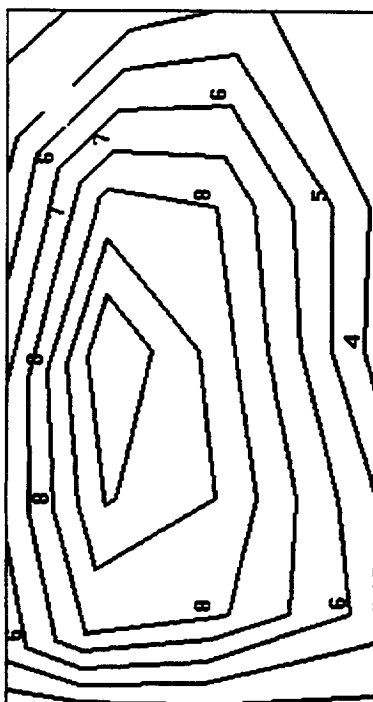
Color Index

—	0	0.267E+03
—	9	0.238E+03
—	8	0.209E+03
—	7	0.181E+03
—	6	0.152E+03
—	5	0.123E+03
—	4	0.944E+02
—	3	0.656E+02
—	2	0.369E+02
—	1	0.815E+01

Min = 8.148906E+00
Max = 2.955882E+02
Min ID= 2691
Max ID= 2929
Contour_ID:
Stress Tensor

Von Mises
At 22

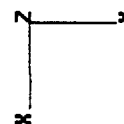
Design_Oy=-20.6_Gz=-19.6
Static Subcase



Upper Left

Metsat AMSU-A1
Shields

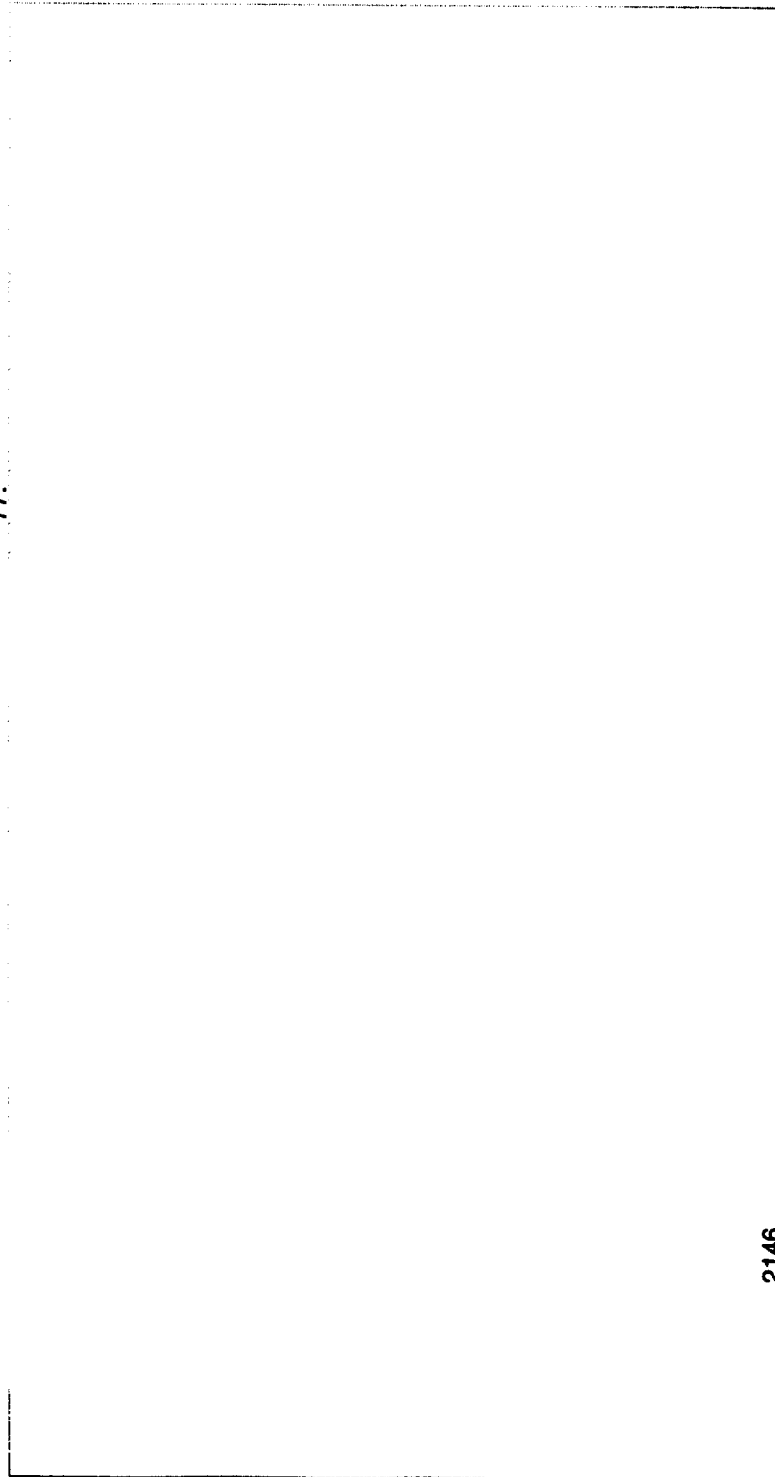
Upper Right



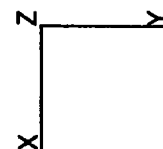
FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:42:22

Upper Left Shield Beams

77.

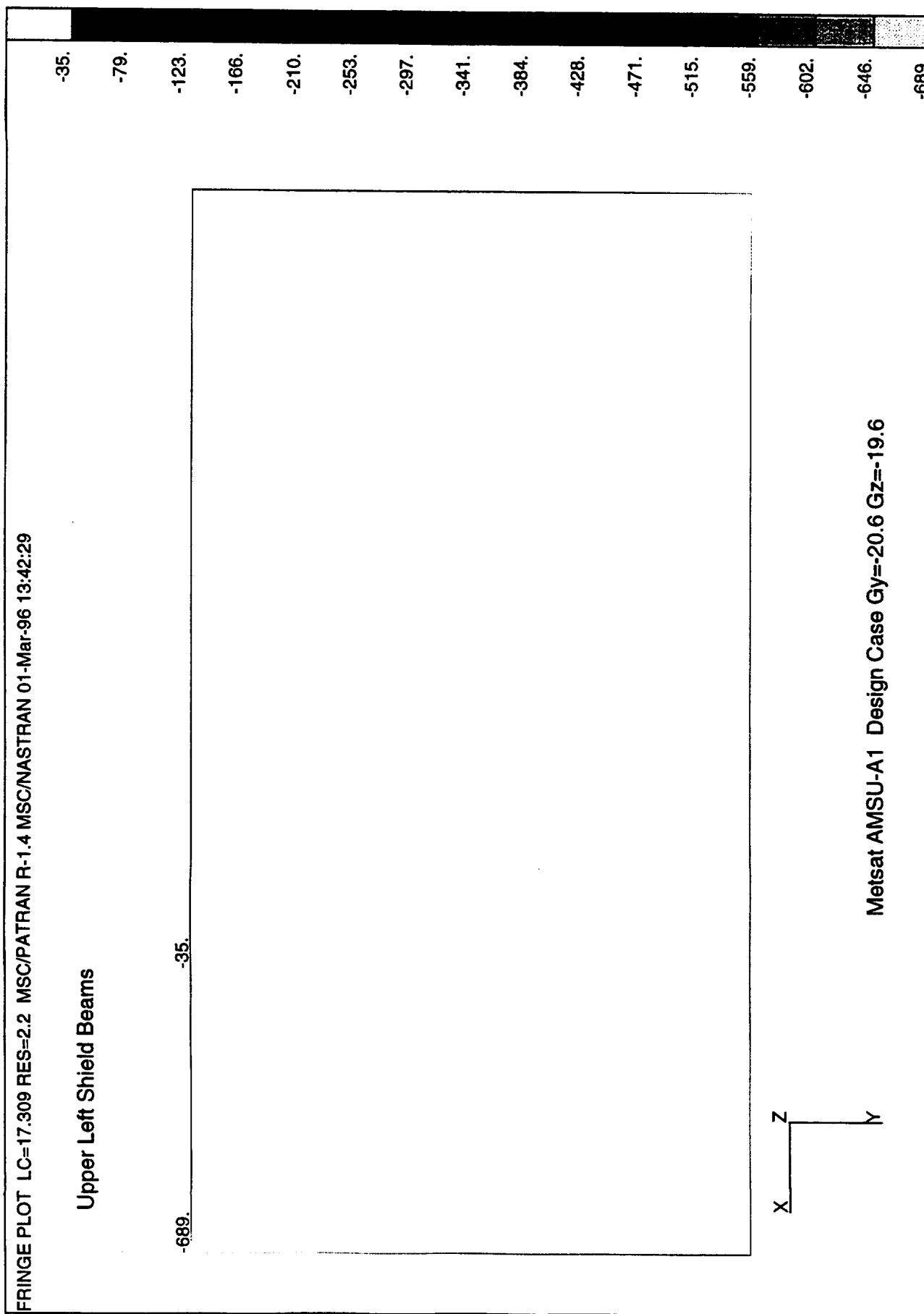


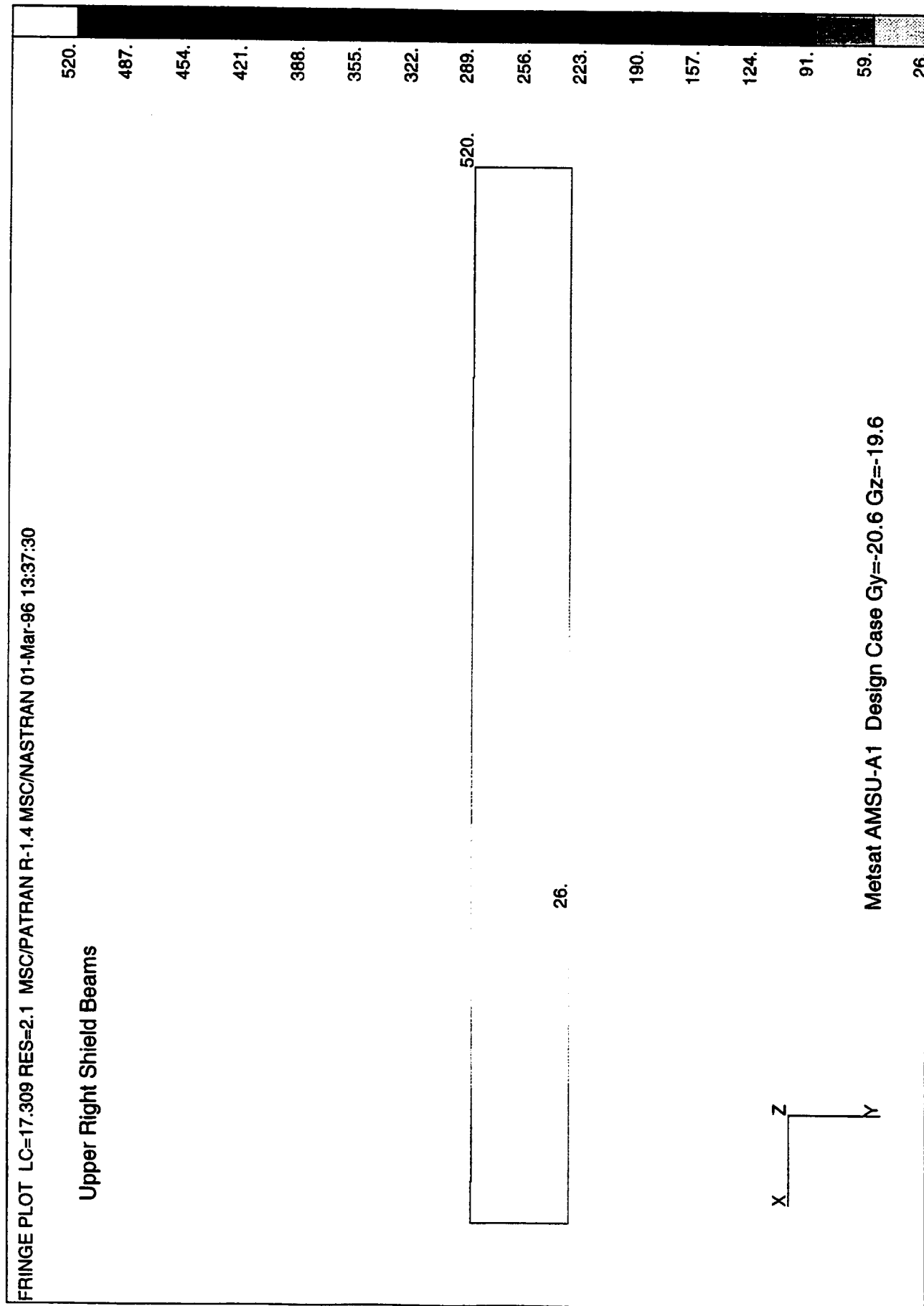
2146.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

2146.
2008.
1870.
1732.
1594.
1456.
1319.
1181.
1043.
905.
767.
629.
491.
353.
215.
77.

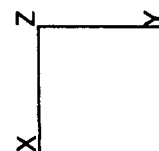




FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:37:37

Upper Right Shield Beams

-448. .7

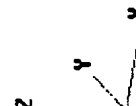
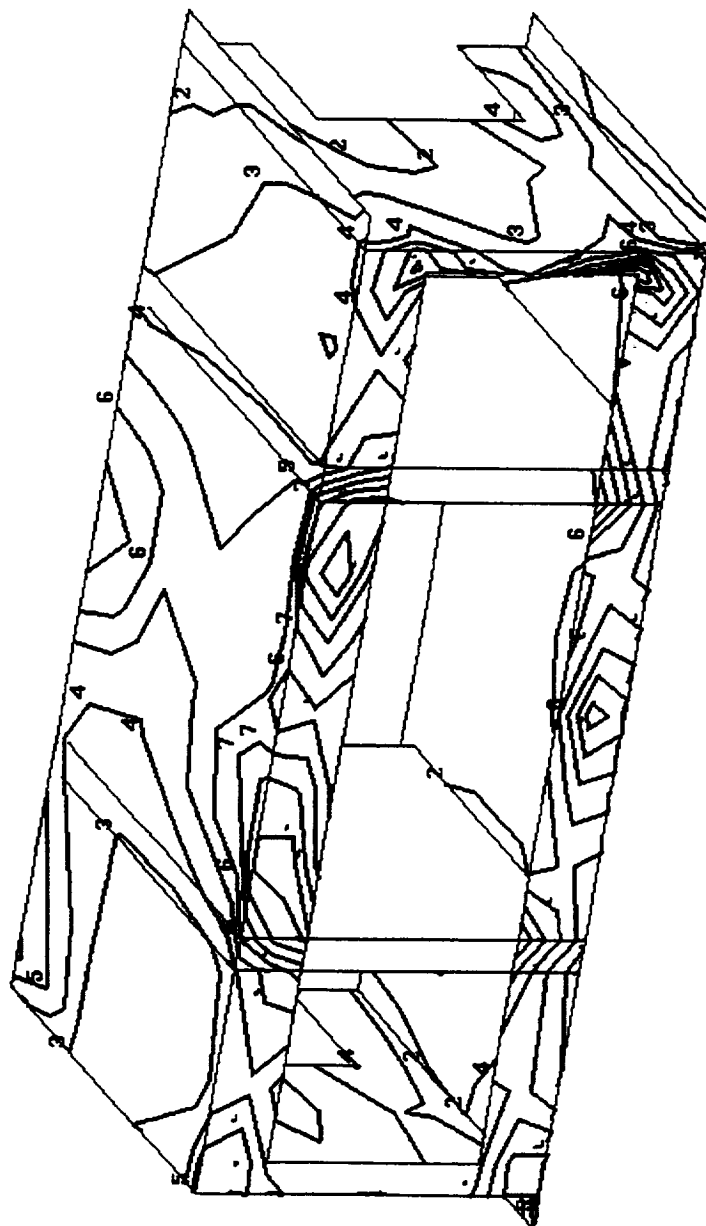


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

.7
-29.
-59.
-89.
-119.
-149.
-179.
-209.
-239.
-268.
-298.
-328.
-358.
-388.
-418.
-448.

Metsat AMSU-A1

Lower Card Cage/Cards



Time: 12:36:59
Date: 02/29/96

Contour
Mode Scalar1

Color Index

—	0	0.245E+04
—	9	0.218E+04
—	8	0.191E+04
—	7	0.164E+04
—	6	0.137E+04
—	5	0.110E+04
—	4	0.824E+03
—	3	0.552E+03
—	2	0.281E+03
—	1	0.885E+01

Min = 8.847040E+00

Max = 2.725939E+03

Min ID= 4711

Max ID= 3726

Contour_9:

Stress Tensor

Von Mises

At 21

Design_Gy=-20.6_Gz=-19.6
Static Subcase

Time: 12:37:27
Date: 02/29/96

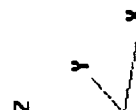
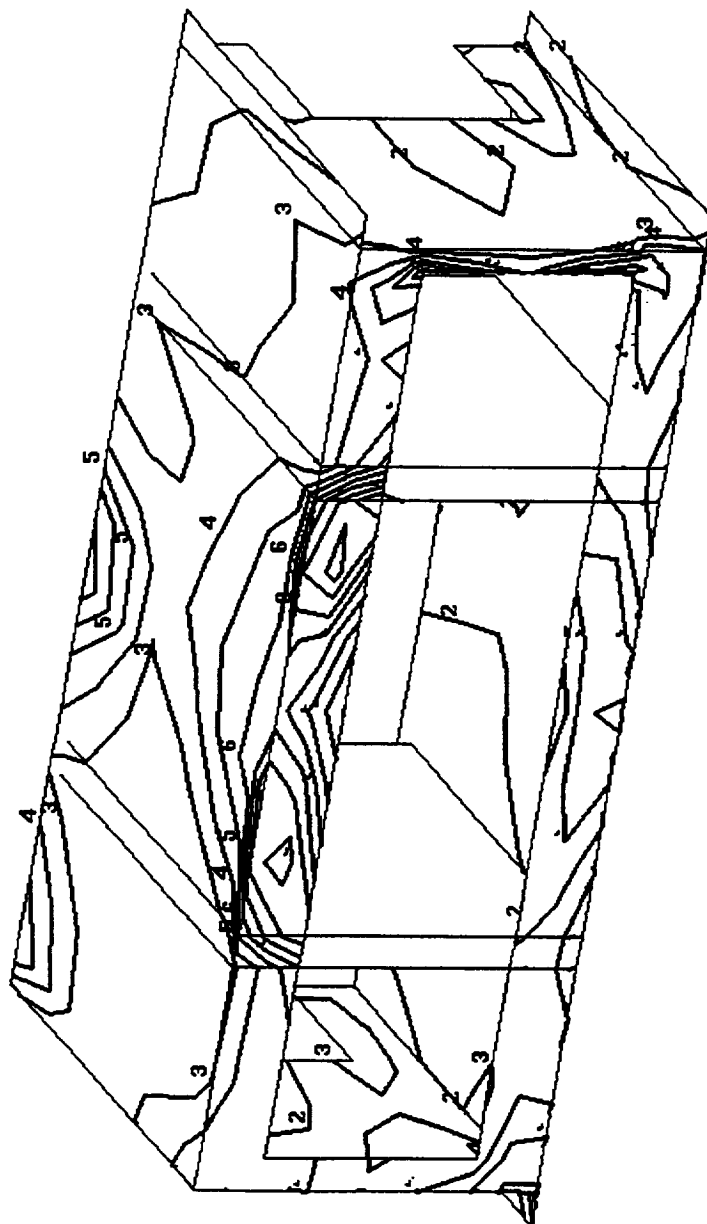
Metsat AMSU-A1
Lower Card Cage/Cards

Contour
Node Scalar1

Color Index

0	0.274E+04
9	0.244E+04
8	0.214E+04
7	0.183E+04
6	0.153E+04
5	0.122E+04
4	0.919E+03
3	0.615E+03
2	0.311E+03
1	0.677E+01

Min = 6.774389E+00
Max = 3.047714E+03
Min ID= 4711
Max ID= 3733
Contour_ID:
Stress Tensor
Von Mises
At 22
Design_Qy=-20.6_Qz=-19.6
Static Subcase



Metsat AMSU-A1 Lower Card Cage Card

Time: 05:56:33
Date: 03/01/96

Contour
Node Scalar1

Color Index	
0	0.702E+03
9	0.625E+03
8	0.540E+03
7	0.471E+03
6	0.394E+03
5	0.317E+03
4	0.240E+03
3	0.163E+03
2	0.086E+02
1	0.005E+01

Min = 8.847048E+00
Max = 7.786360E+02

Min ID= 4711

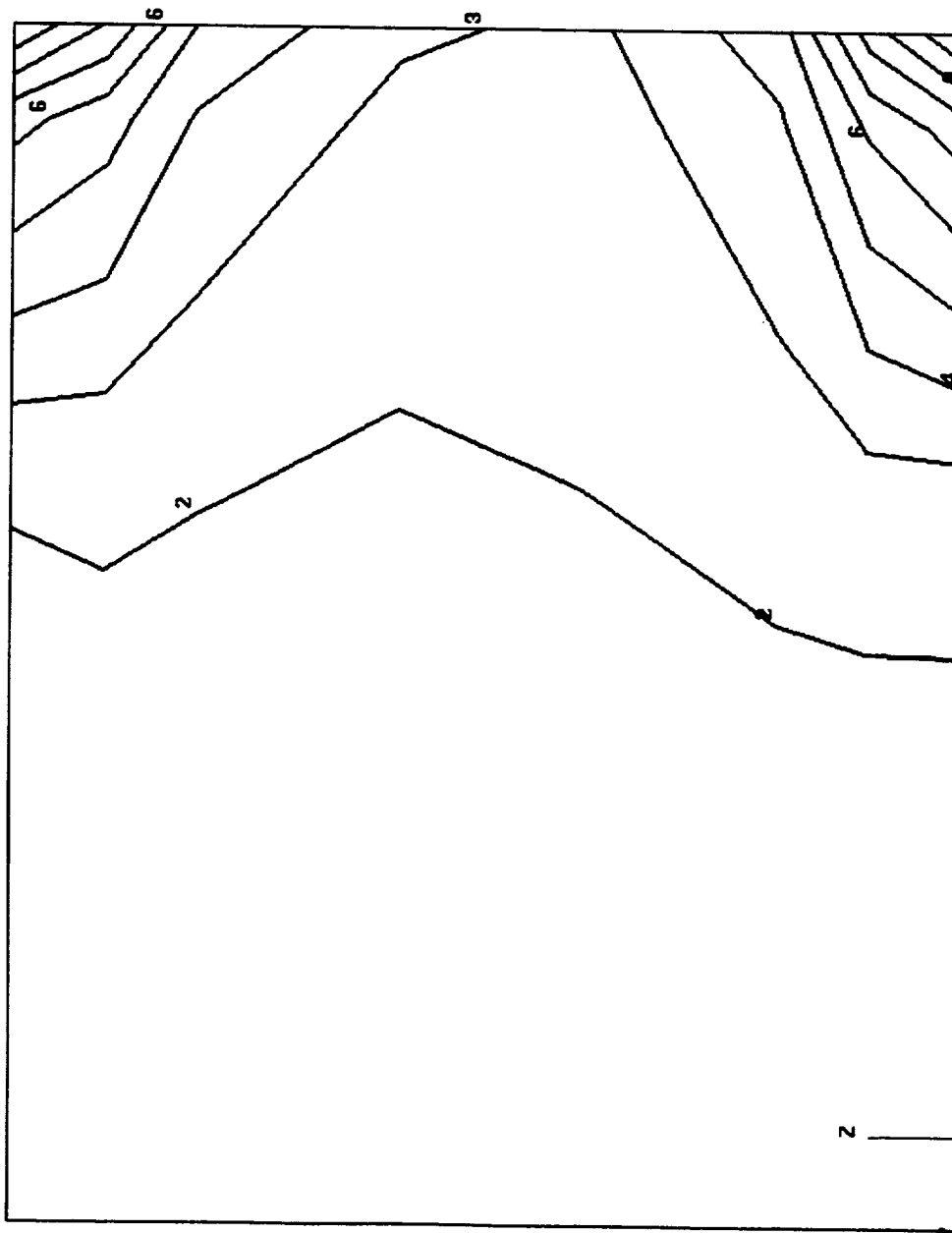
Max ID= 4697

Contour_9:

Stress Tensor

Von Mises
At Z1

Design_Qy=-20.6_0z=-19.6
Static Subcase



Time: 05:58:29
Date: 03/01/96

Contour
Node Scalar1

Color Index	
0	0.607E+03
9	0.612E+03
8	0.536E+03
7	0.460E+03
6	0.385E+03
5	0.309E+03
4	0.234E+03
3	0.158E+03
2	0.824E+02
1	0.677E+01

Min = 6.774389E+00
Max = 7.628578E+02

Min ID= 4711

Max ID= 4702

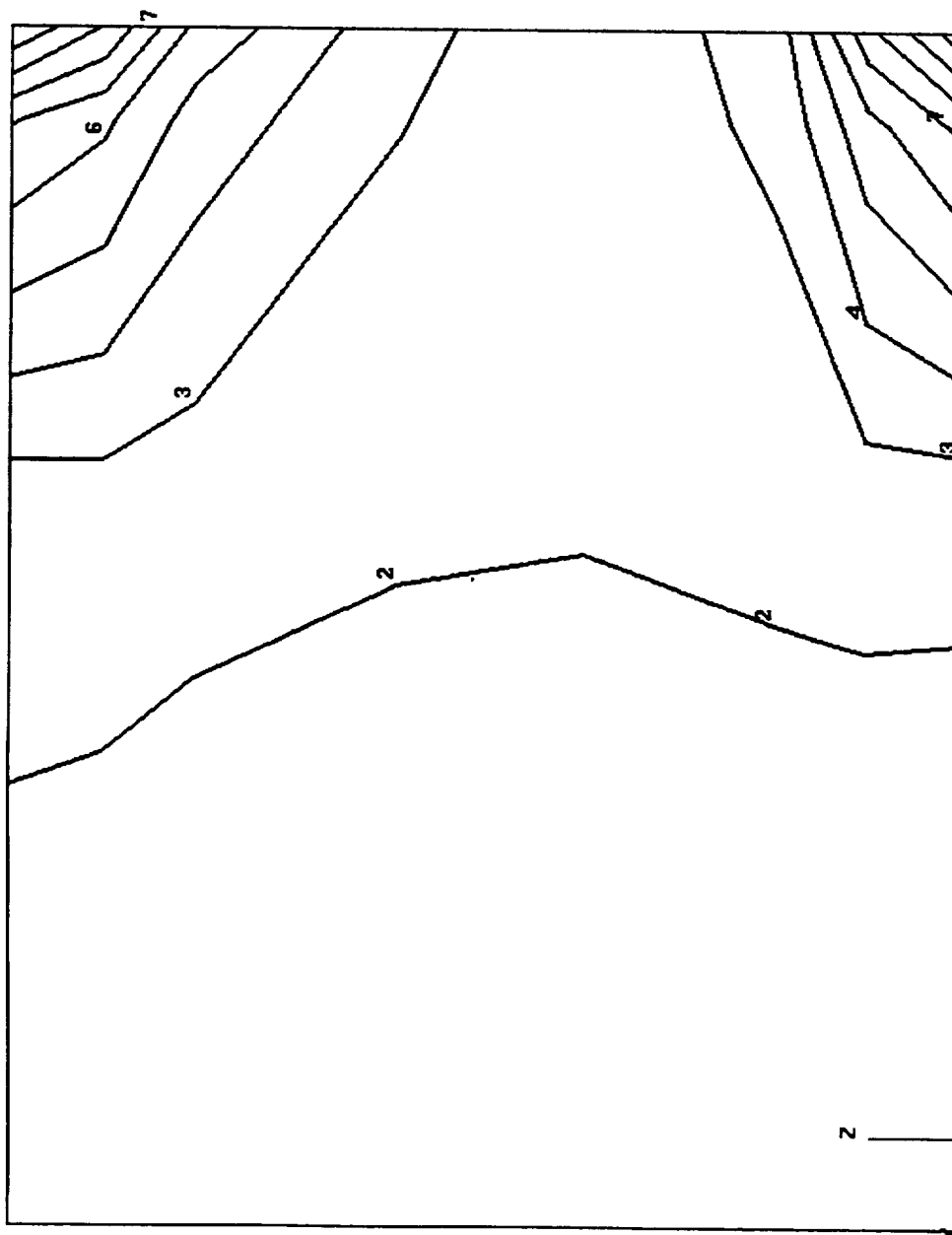
Contour_10:

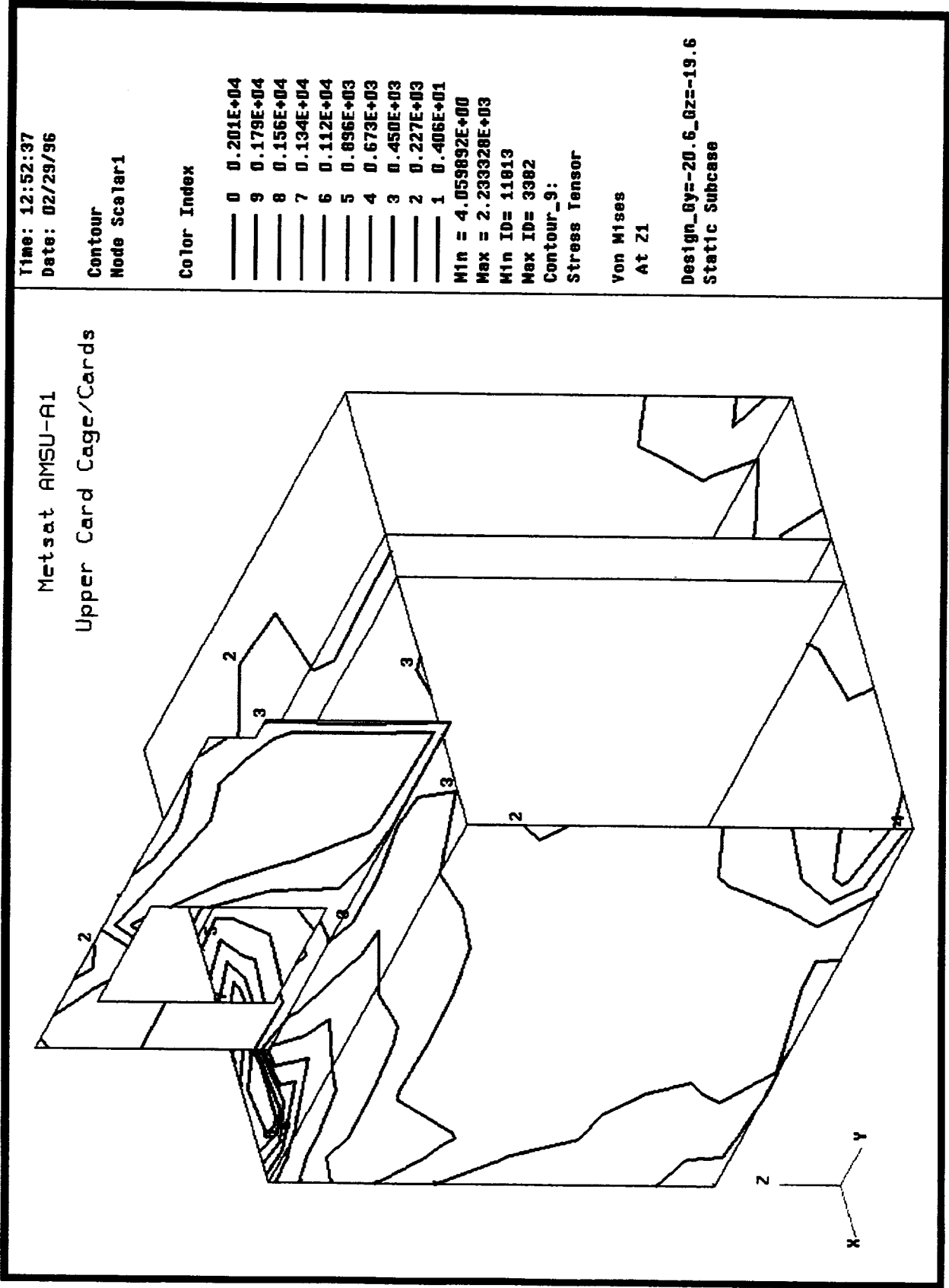
Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0z=-19.6
Static Subcase

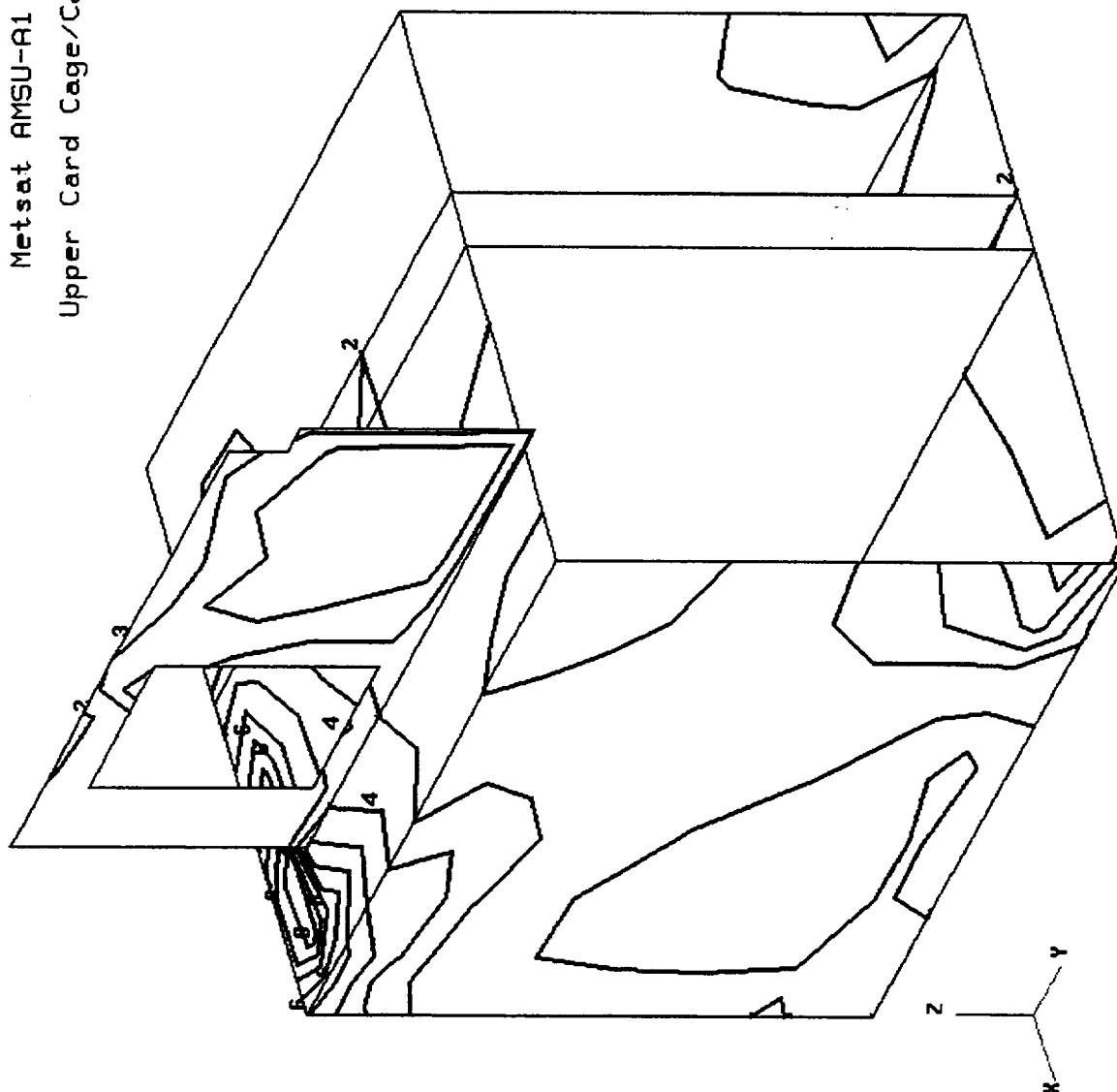
Metsat AMSU-A1 Lower Card Cage Card





Time: 12:53:05
Date: 02/29/96

Metsat AMSU-A1
Upper Card Cage/Cards



Contour
Node Scalar1

Color Index

0	0.213E+04
9	0.189E+04
8	0.165E+04
7	0.142E+04
6	0.118E+04
5	0.947E+03
4	0.711E+03
3	0.475E+03
2	0.239E+03
1	0.277E+01

Min = 2.765710E+00

Max = 2.362193E+03

Min ID= 11852

Max ID= 3382

Contour_10:

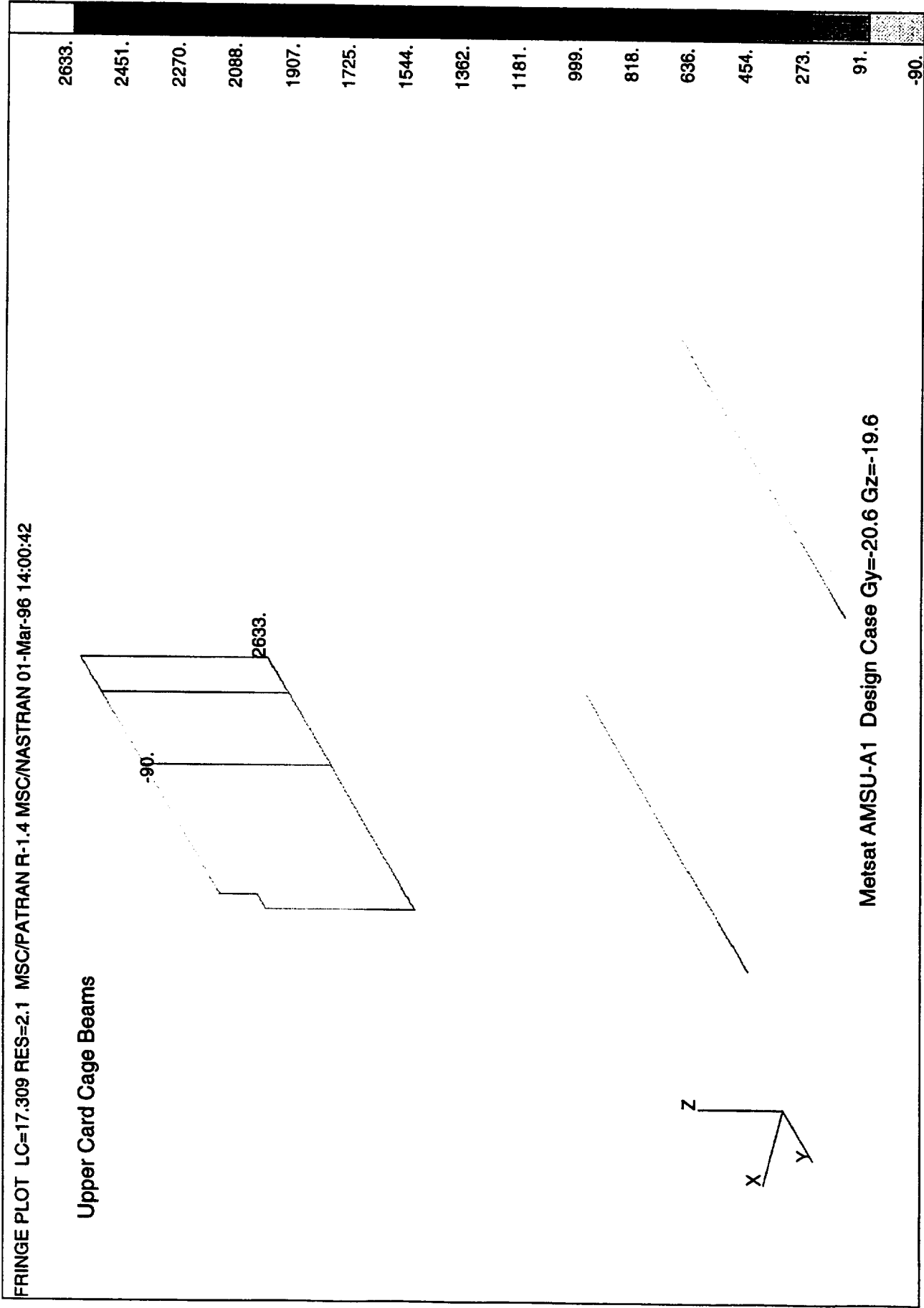
Stress Tensor

Von Mises

At 22

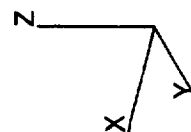
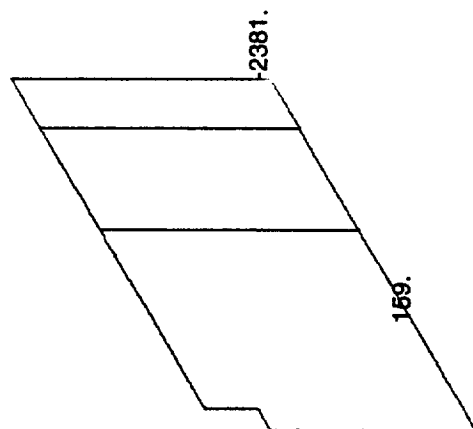
Design_Qy=-20.6_Qz=-19.6

Static Subcase



FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:00:48

Upper Card Cage Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

159.
-10.
-180.
-349.
-518.
-688.
-857.
-1026.
-1196.
-1365.
-1534.
-1703.
-1873.
-2042.
-2211.
-2381.

Time: 12:51:37
Date: 02/29/96

Contour
Node Scalar1

Color Index

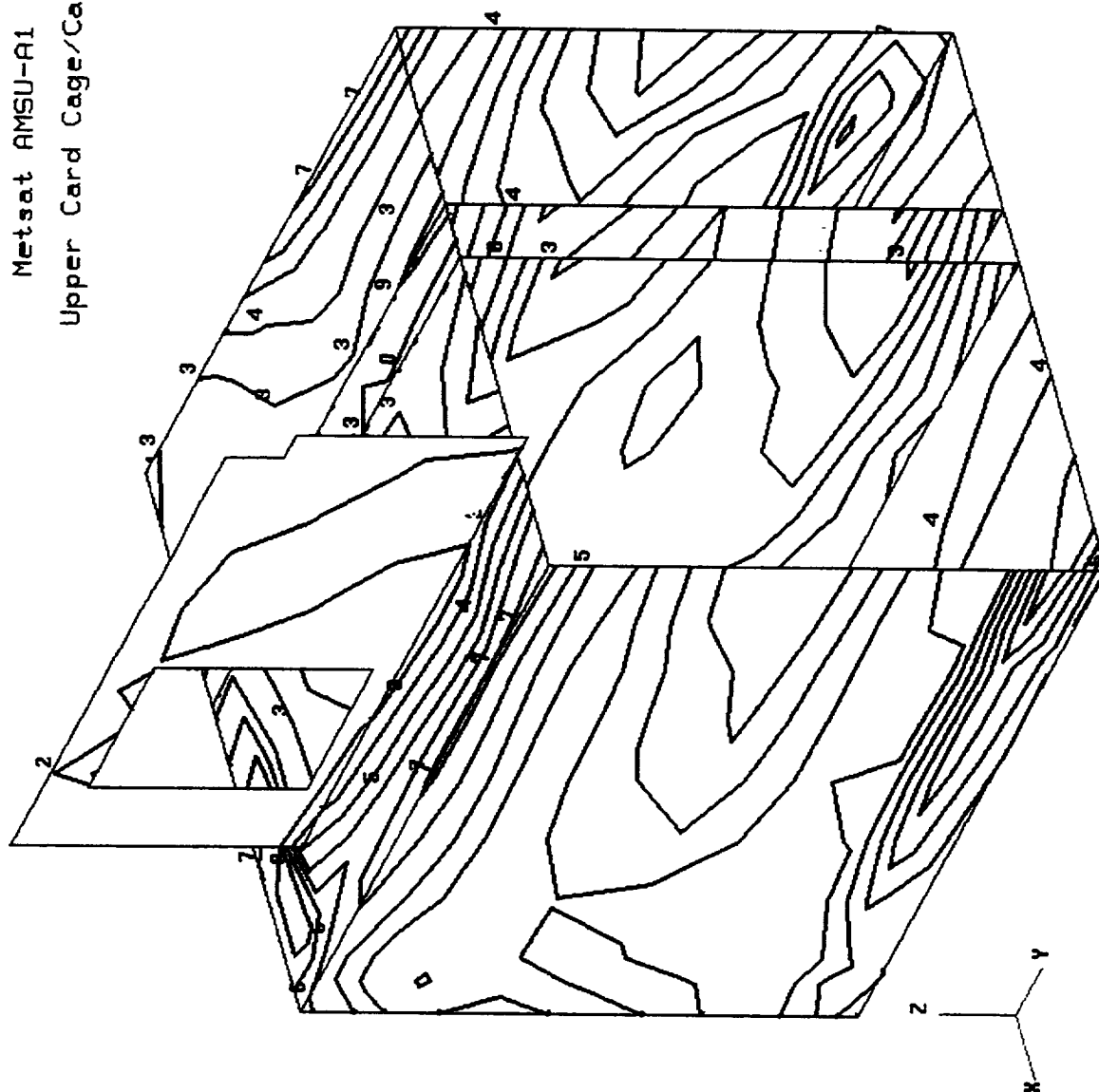
—	0	0.494E+03
—	9	0.441E+03
—	8	0.388E+03
—	7	0.335E+03
—	6	0.283E+03
—	5	0.230E+03
—	4	0.177E+03
—	3	0.124E+03
—	2	0.712E+02
—	1	0.184E+02

Min = 1.839196E+01
Max = 5.468486E+02
Min ID= 2167
Max ID= 3556
Contour_7:
Stress Tensor

Von Mises
At 21

Design_Gy=-20.6_Gx=21.2
Static Subcase

Metsat AMSU-A1
Upper Card Cage/Cards



Time: 12:52:06
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.668E+03
1	0.596E+03
2	0.525E+03
3	0.453E+03
4	0.382E+03
5	0.310E+03
6	0.238E+03
7	0.167E+03
8	0.954E+02
9	0.238E+02

Min = 2.383665E+01

Max = 7.392729E+02

Min ID= 2448

Max ID= 3583

Contour_8:

Stress Tensor

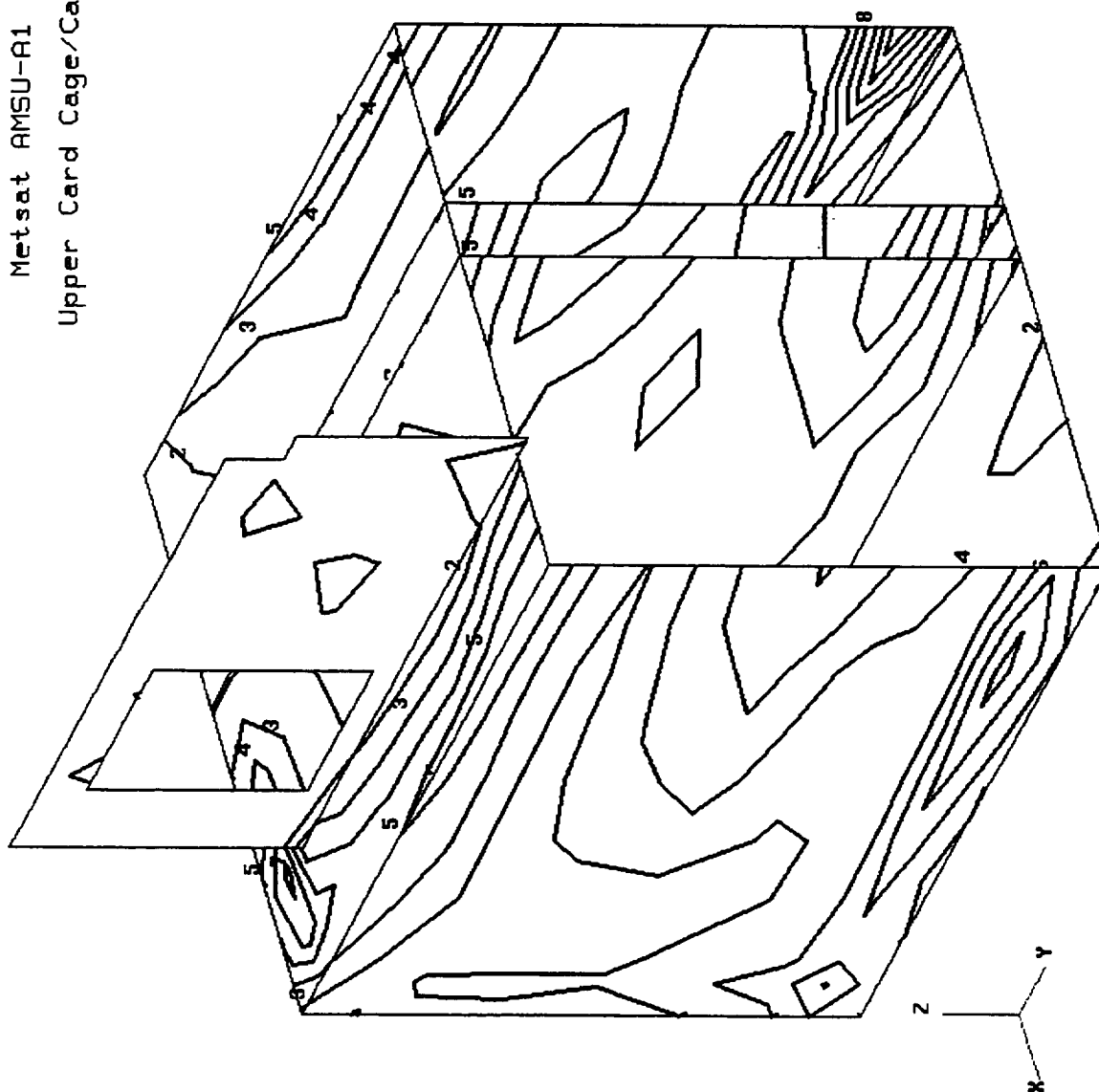
Von Mises

At 22

Design_Gy=-20.6_Gx=21.2
Static Subcase

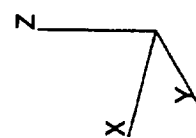
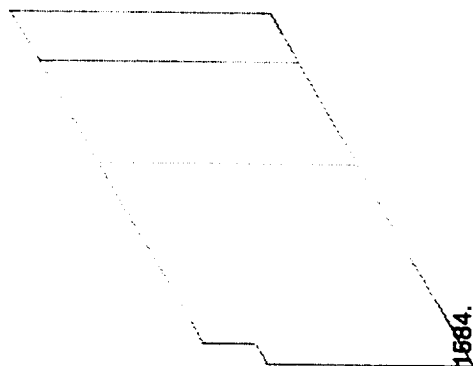
Metsat AMSU-A1

Upper Card Cage/Cards



FRINGE PLOT LC=14.308 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:01:17

Upper Card Cage Beams



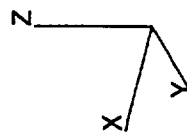
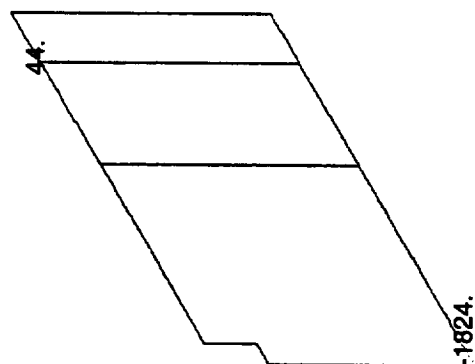
-48.

Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

1584.
1475.
1366.
1257.
1149.
1040.
931.
822.
714.
605.
496.
387.
278.
170.
61.
-48.

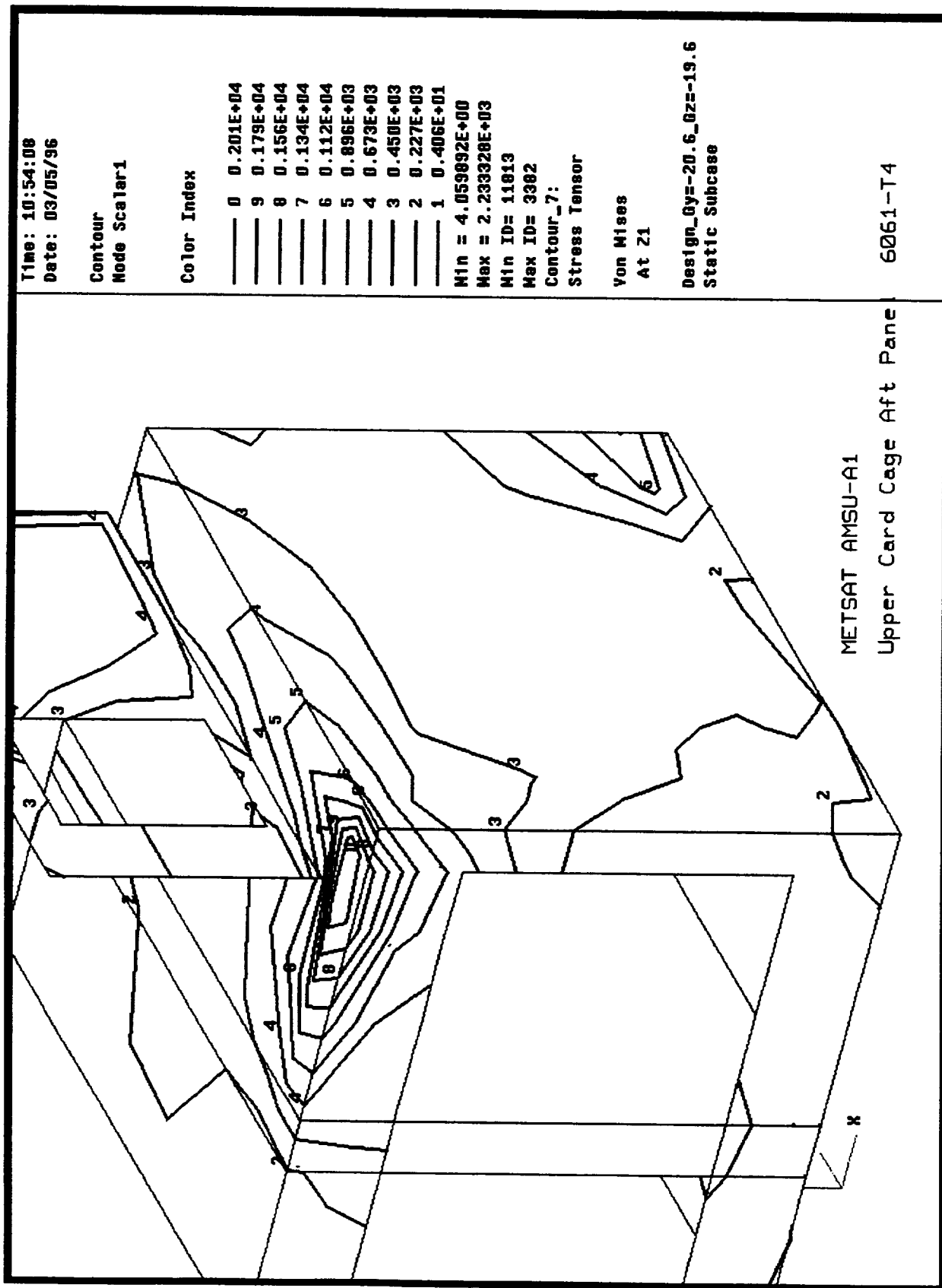
FRINGE PLOT LC=14,308 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:01:23

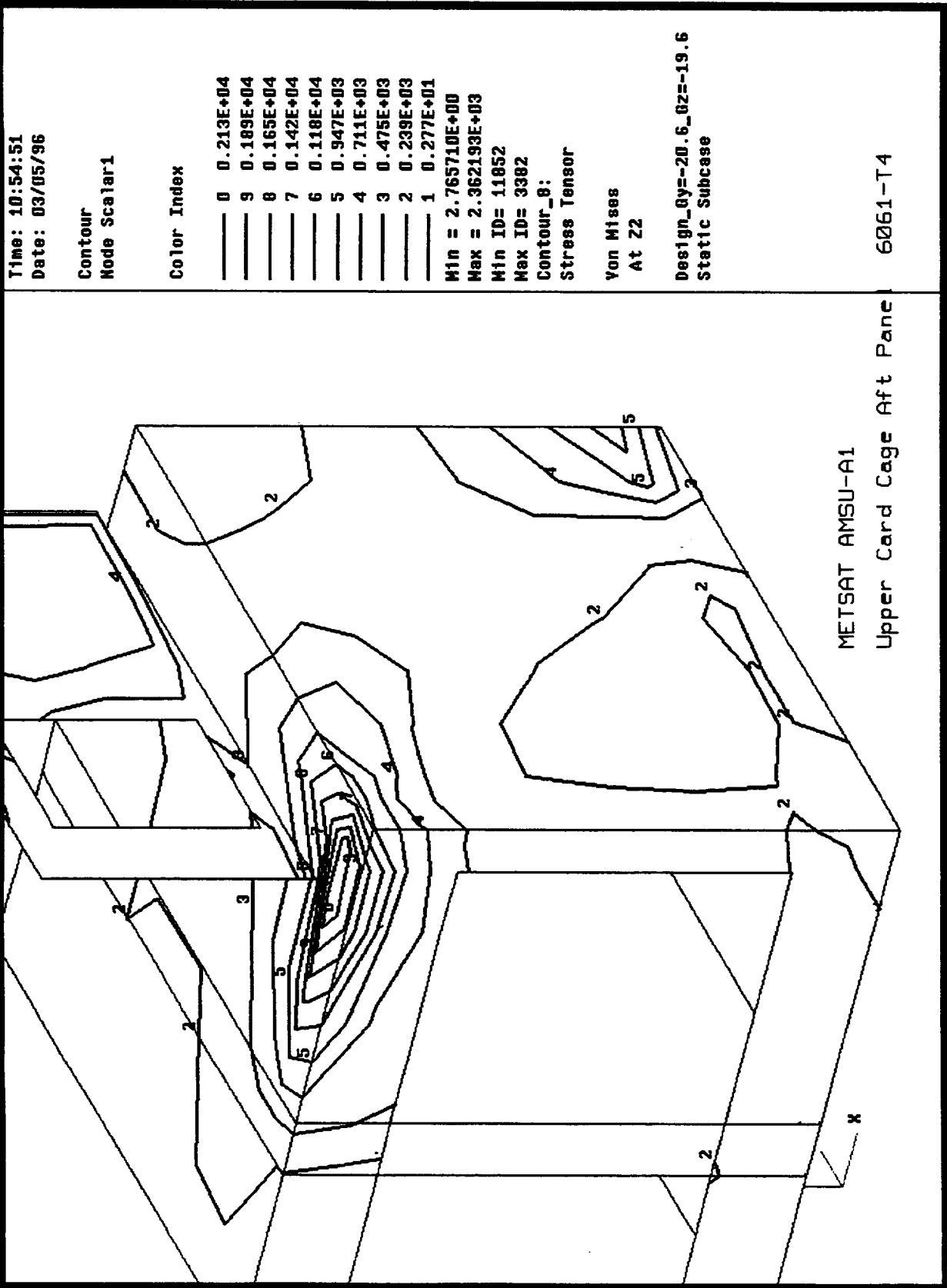
Upper Card Cage Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gx=21.2

44.	-81.	-205.	-330.	-454.	-579.	-703.	-828.	-952.	-1077.	-1201.	-1326.	-1450.	-1575.	-1699.	-1824.
-----	------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------

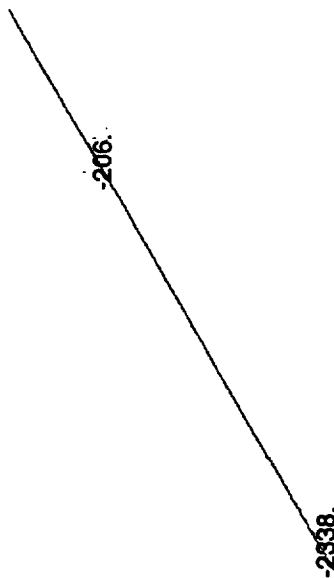
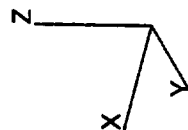




FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:11:52

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL

BEAM ELEMENTS



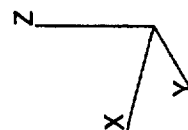
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

-206.
-348.
-490.
-633.
-775.
-917.
-1059.
-1201.
-1343.
-1485.
-1627.
-1769.
-1912.
-2054.
-2196.
-2338.

FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:11:47

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL

BEAM ELEMENTS



99.

2409.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

2409.
2255.
2101.
1947.
1793.
1639.
1485.
1331.
1177.
1023.
869.
715.
561.
407.
253.
99.

Metsat AMSU-A1 Upper Card

Time: 15:40:18
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.236E+03
1	0.210E+03
2	0.184E+03
3	0.158E+03
4	0.133E+03
5	0.107E+03
6	0.081E+02
7	0.555E+02
8	0.298E+02
9	0.406E+01

Min = 4.059892E+00
Max = 2.613477E+02

Min ID= 11813

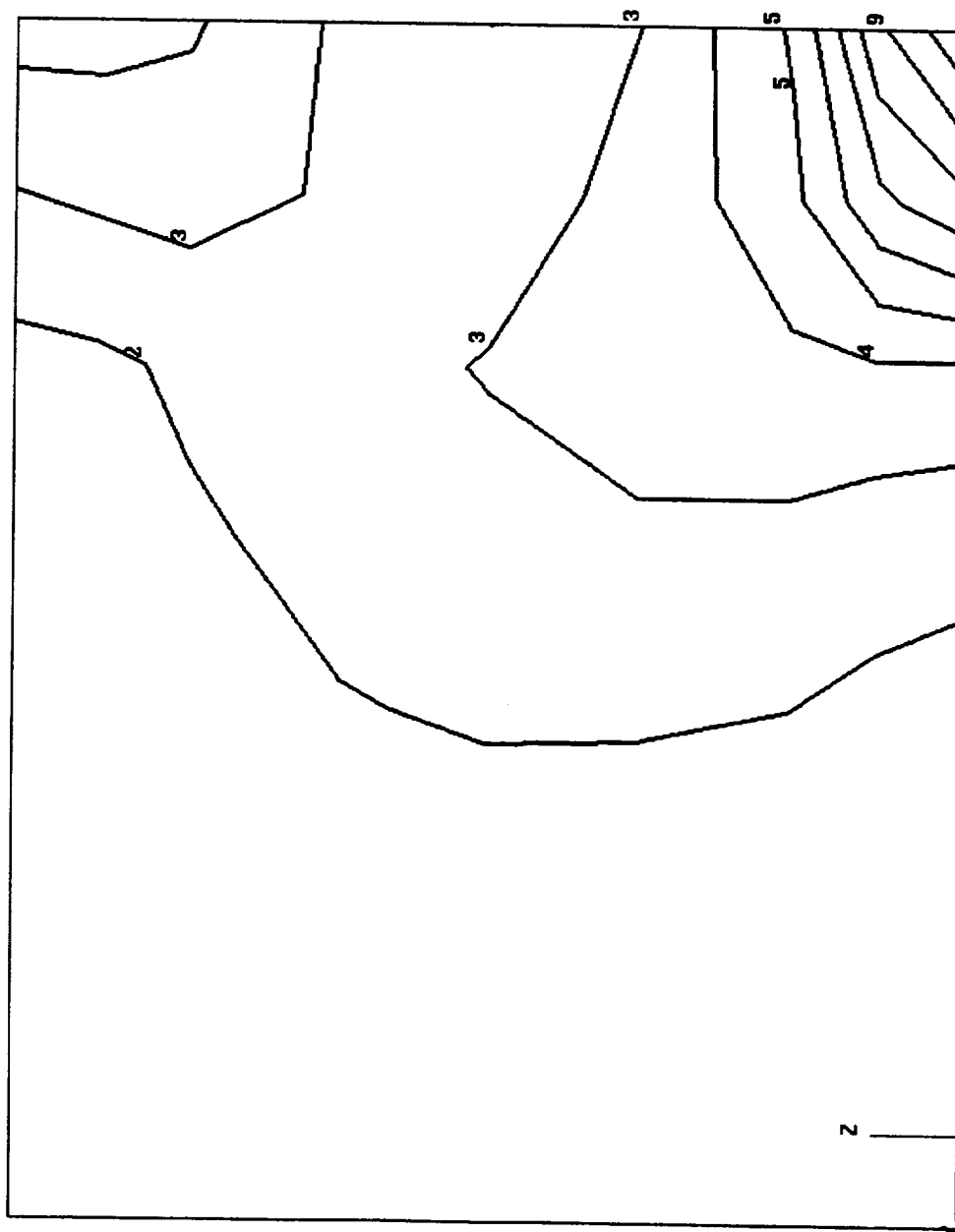
Max ID= 11203

Contour_9:

Stress Tensor

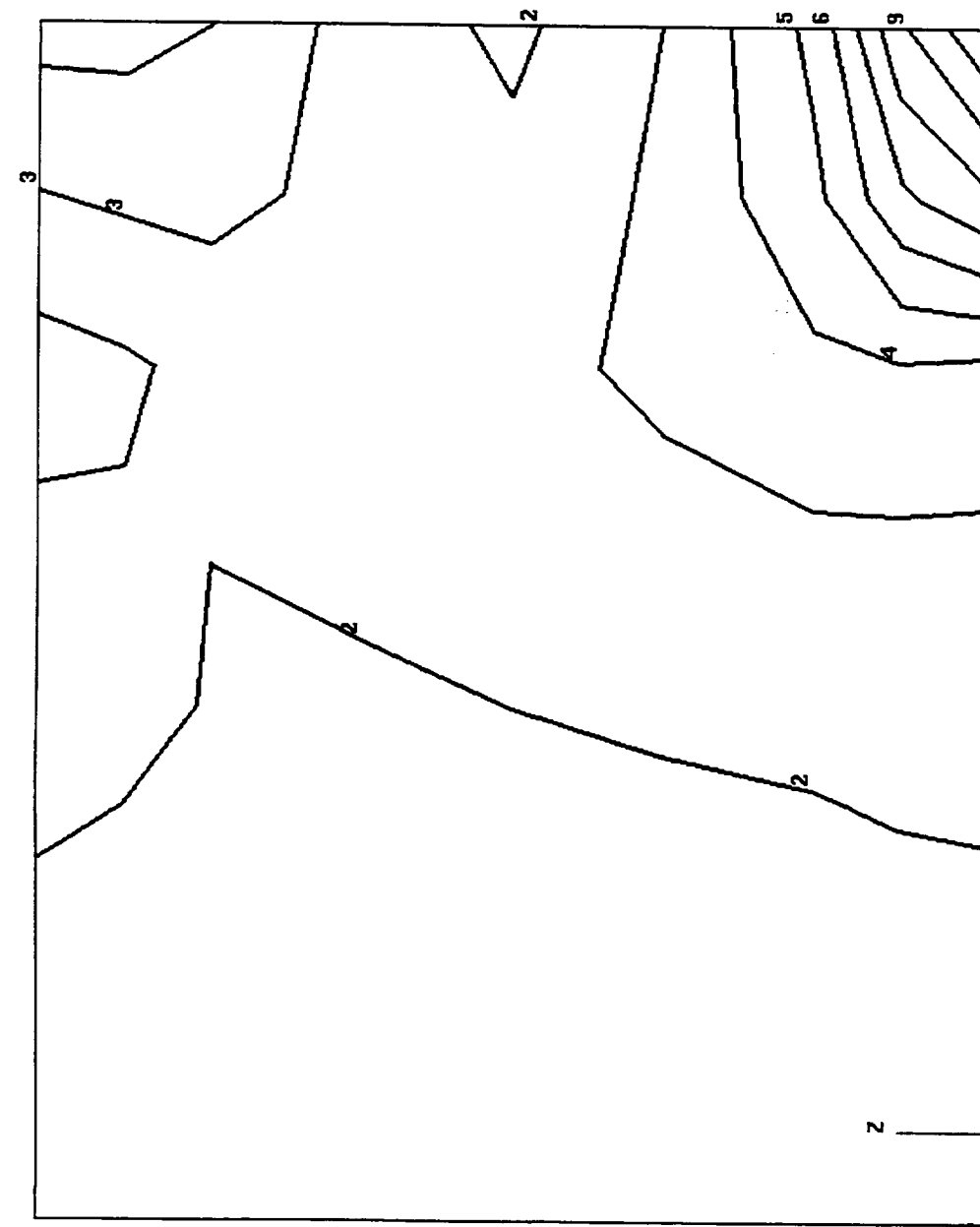
Von Mises
At Z1

Design_By=-20.6_02=-19.6
Static Subcase



Time: 15:37:58
Date: 02/29/96

Metsat AMSU-A1 Upper Card



Contour
Node Scalar1

Color Index	
0	0.238E+03
9	0.212E+03
8	0.186E+03
7	0.160E+03
6	0.133E+03
5	0.107E+03
4	0.812E+02
3	0.550E+02
2	0.289E+02
1	0.277E+01

Min = 2.765710E+00

Max = 2.641087E+02

Min ID= 11852

Max ID= 11203

Contour_10:

Stress Tensor

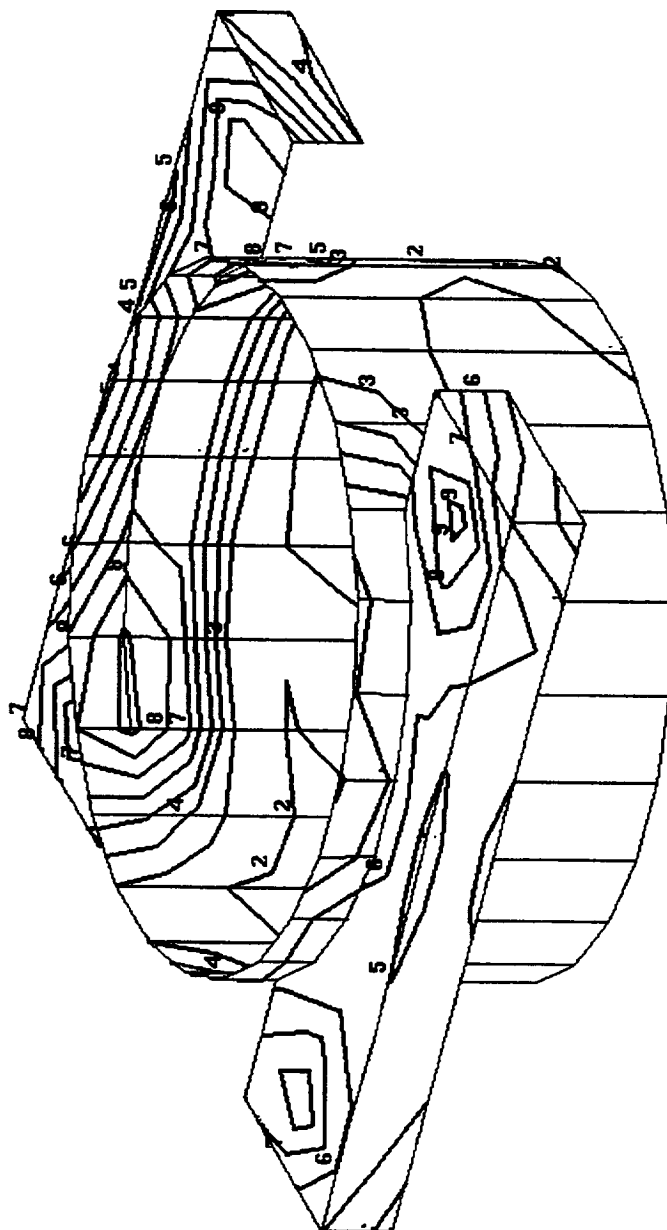
Von Mises

At 22

Design_By=-20.6_0z=-19.6
Static Subcase

Metsat AMSU-A1

Lower Warmload w/Supports



Time: 10:02:27
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.154E+04
—	9	0.138E+04
—	8	0.121E+04
—	7	0.105E+04
—	6	0.880E+03
—	5	0.714E+03
—	4	0.548E+03
—	3	0.382E+03
—	2	0.216E+03
—	1	0.505E+02

Min = 5.047954E+01

Max = 1.709286E+03

Min ID= 4961

Max ID= 3060

Contour_9:

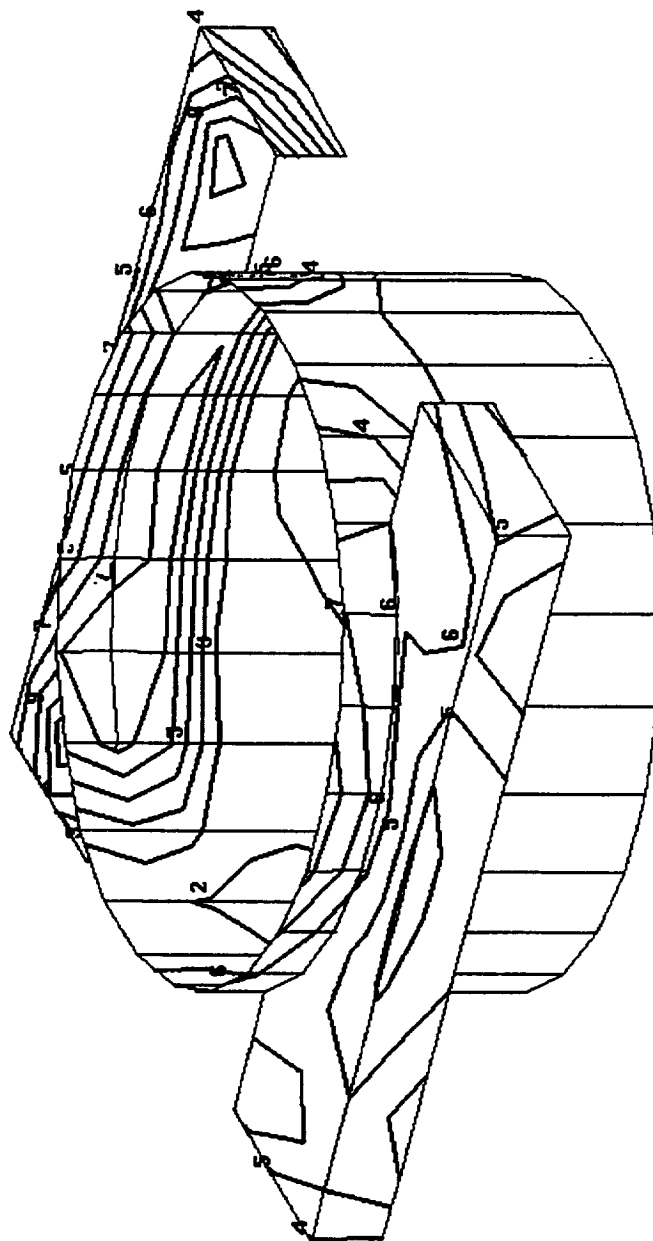
Stress Tensor

Von Mises

At Z1

Design_Qy=-20.6_Qz=-19.6
Static Subcase

Metsat AMSU-A1
Lower Warmload w/Supports



Time: 10:06:02
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.179E+04
—	9	0.159E+04
—	8	0.140E+04
—	7	0.121E+04
—	6	0.101E+04
—	5	0.821E+03
—	4	0.628E+03
—	3	0.435E+03
—	2	0.242E+03
—	1	0.484E+02

Min = 4.844658E+01

Max = 1.981038E+03

Min ID= 5171

Max ID= 3060

Contour_10:

Stress Tensor

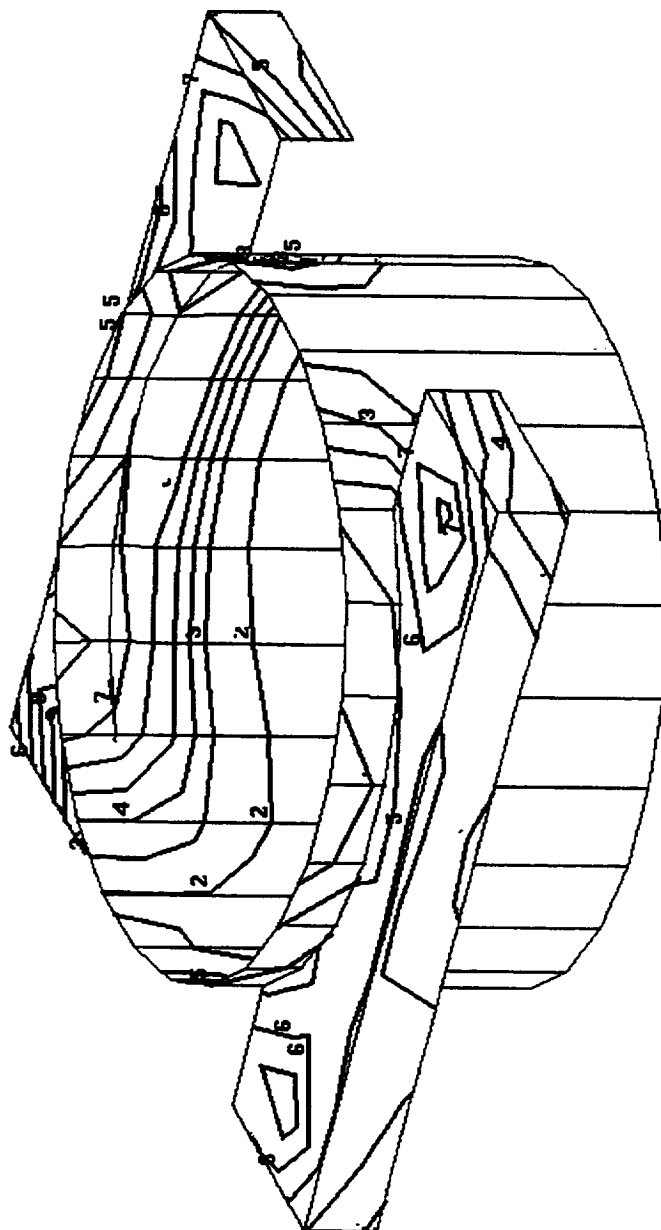
Von Mises

At 22

Design_0y=-20.6_0z=-19.6
Static Subcase

Metsat AMSU-A1

Upper Warmload w/Supports



Time: 11:04:54
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.160E+04
—	9	0.142E+04
—	8	0.125E+04
—	7	0.108E+04
—	6	0.901E+03
—	5	0.727E+03
—	4	0.553E+03
—	3	0.379E+03
—	2	0.204E+03
—	1	0.301E+02

M1n = 3.006900E+01

Max = 1.772311E+03

M1n ID= 5271

Max ID= 2739

Contour_9:

Stress Tensor

Von Mises

At Z1

Design_0y=-20.6_0z=-19.6
Static Subcase

Time: 11:05:21
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.172E+04
9	0.153E+04
8	0.135E+04
7	0.116E+04
6	0.969E+03
5	0.781E+03
4	0.593E+03
3	0.405E+03
2	0.217E+03
1	0.296E+02

Min = 2.956924E+01

Max = 1.908798E+03

Min ID= 5271

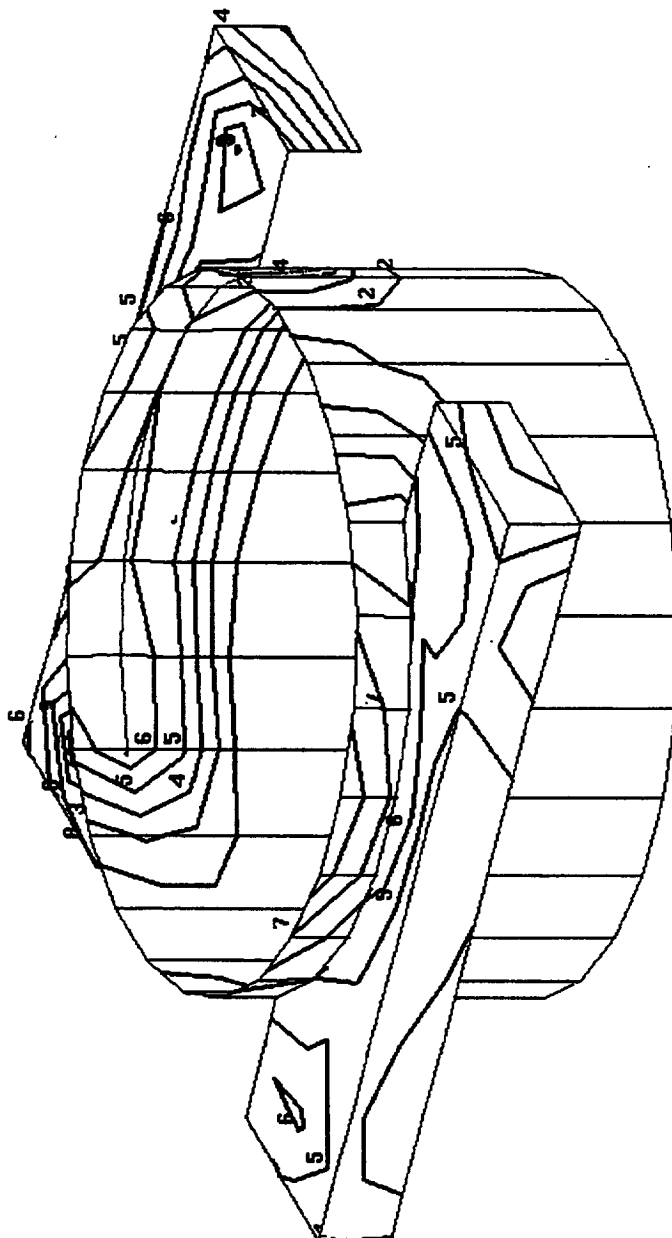
Max ID= 2961

Contour_10:

Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0z=-19.6
Static Subcase



Metsat AMSU-A1
Upper Warmload w/Supports

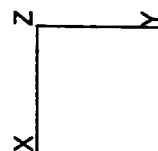
FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:10:55

Beam Support 1331406-1 Beams

1094.
1038.
982.
926.
870.
814.
758.
701.
645.
589.
533.
477.
421.
365.
309.
252.

1094.

252.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

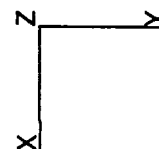
FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:11:05

Beam Support 1331406-1 Beams

172.
87.
2.
-83.
-168.
-253.
-338.
-423.
-509.
-594.
-679.
-764.
-849.
-934.
-1019.
-1104.

-1104.

172.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Metsat AMSU-A1
Lower Reflector

Time: 11:41:55
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.837E+03
—	9	0.745E+03
—	8	0.654E+03
—	7	0.562E+03
—	6	0.470E+03
—	5	0.378E+03
—	4	0.286E+03
—	3	0.195E+03
—	2	0.103E+03
—	1	0.112E+02

Min = 1.116715E+01

Max = 9.287907E+02

Min ID= 4004

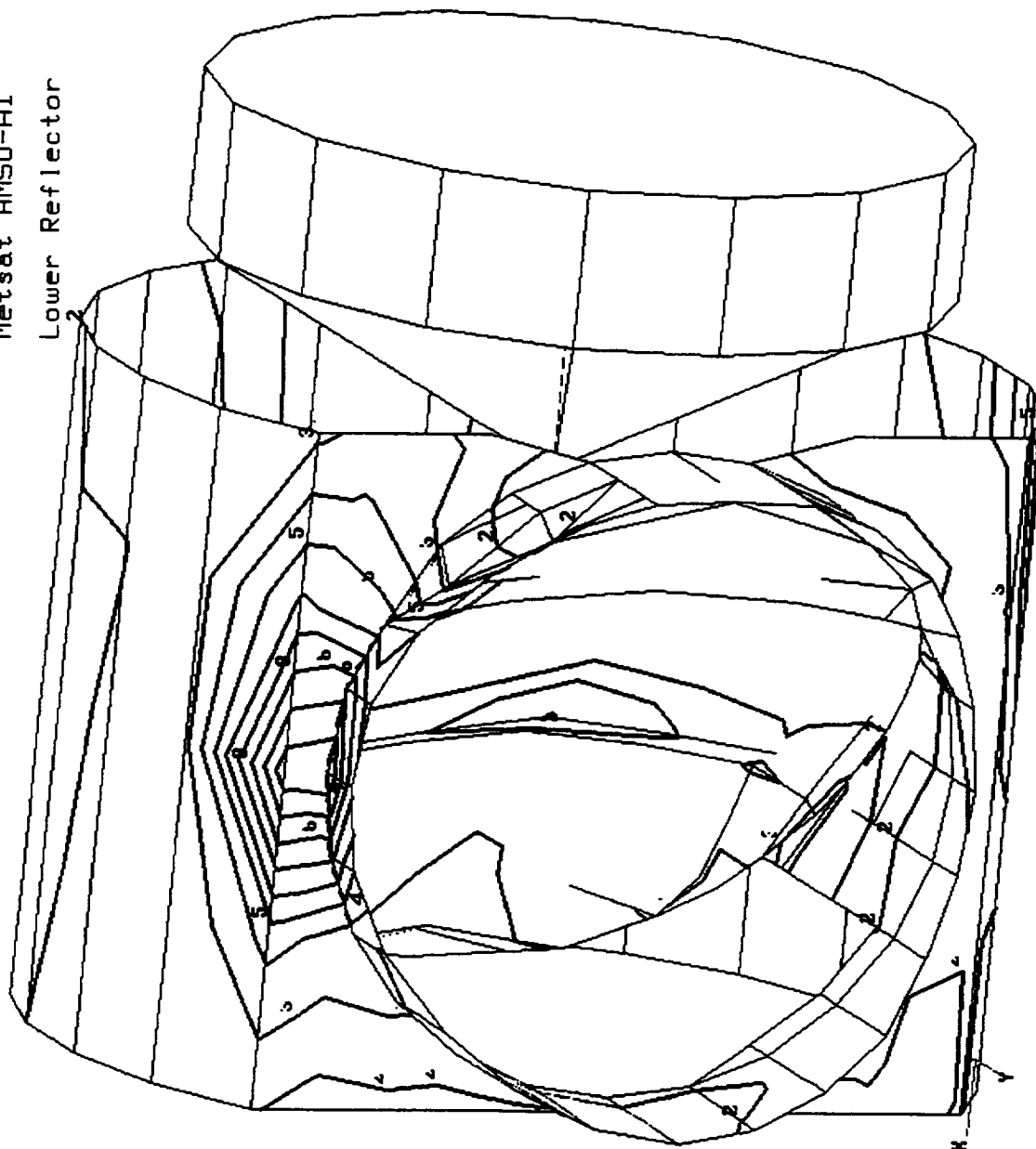
Max ID= 4029

Contour_9:

Stress Tensor

Von Mises
At Z1

Design_Gy=-20.6_Gz=-19.6
Static Subcase



Time: 11:41:12
Date: 02/29/96

Metsat AMSU-A1
Lower Reflector

Contour
Node Scalar1

Color Index

0	0.830E+03
9	0.740E+03
8	0.650E+03
7	0.560E+03
6	0.470E+03
5	0.380E+03
4	0.290E+03
3	0.200E+03
2	0.109E+03
1	0.193E+02

Min = 1.929545E+01
Max = 9.206263E+02

Min ID= 4006

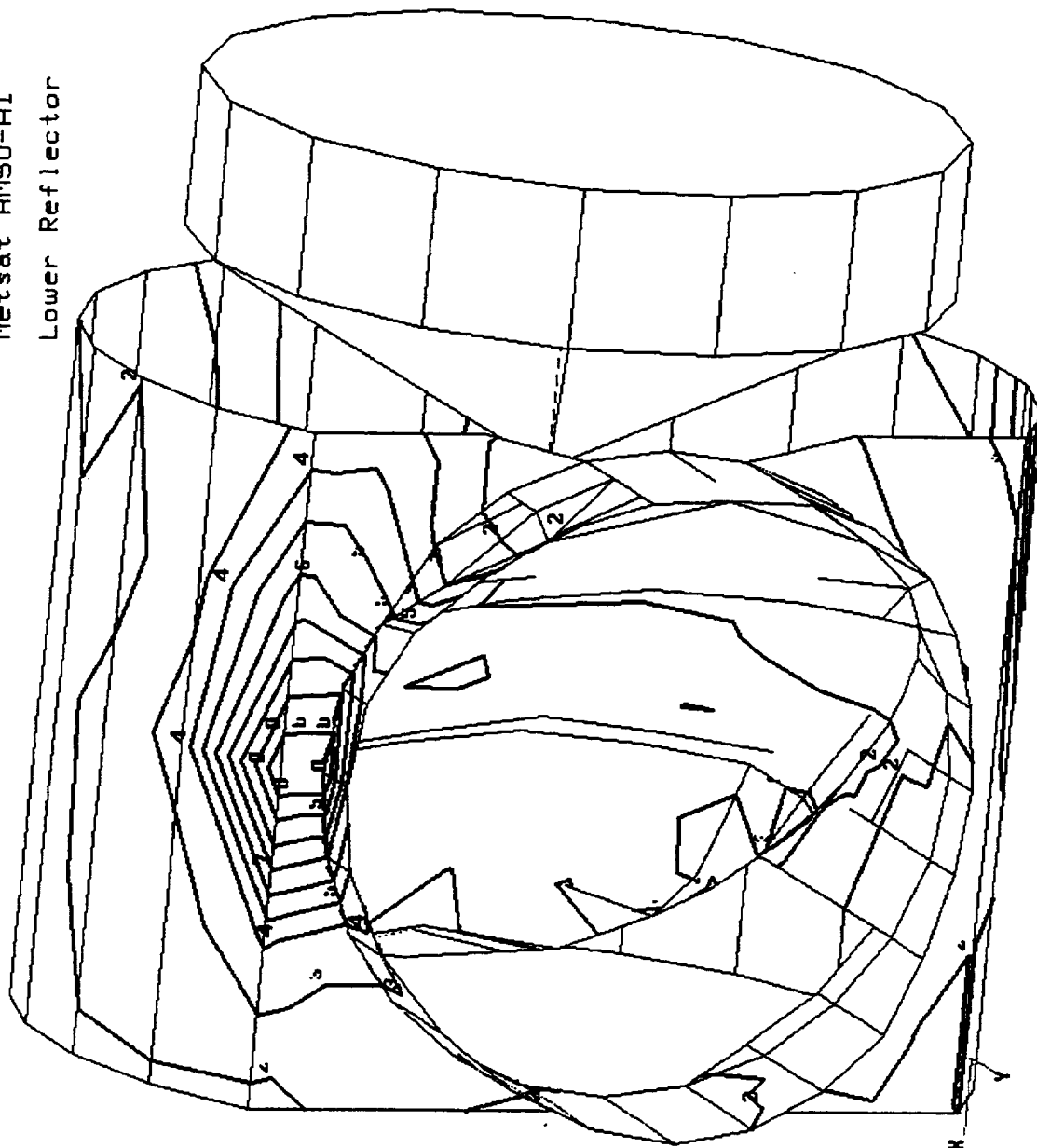
Max ID= 4029

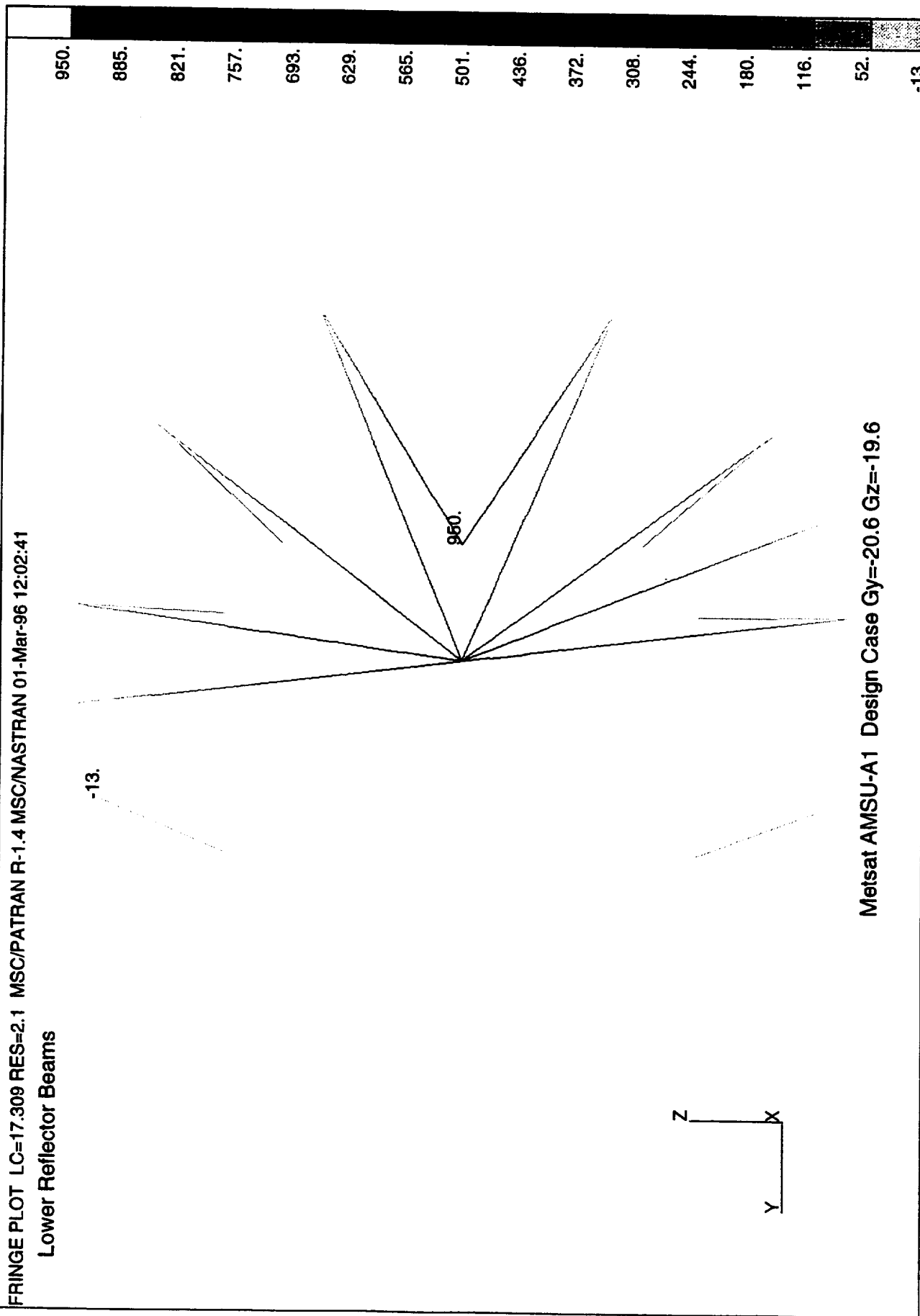
Contour_10:

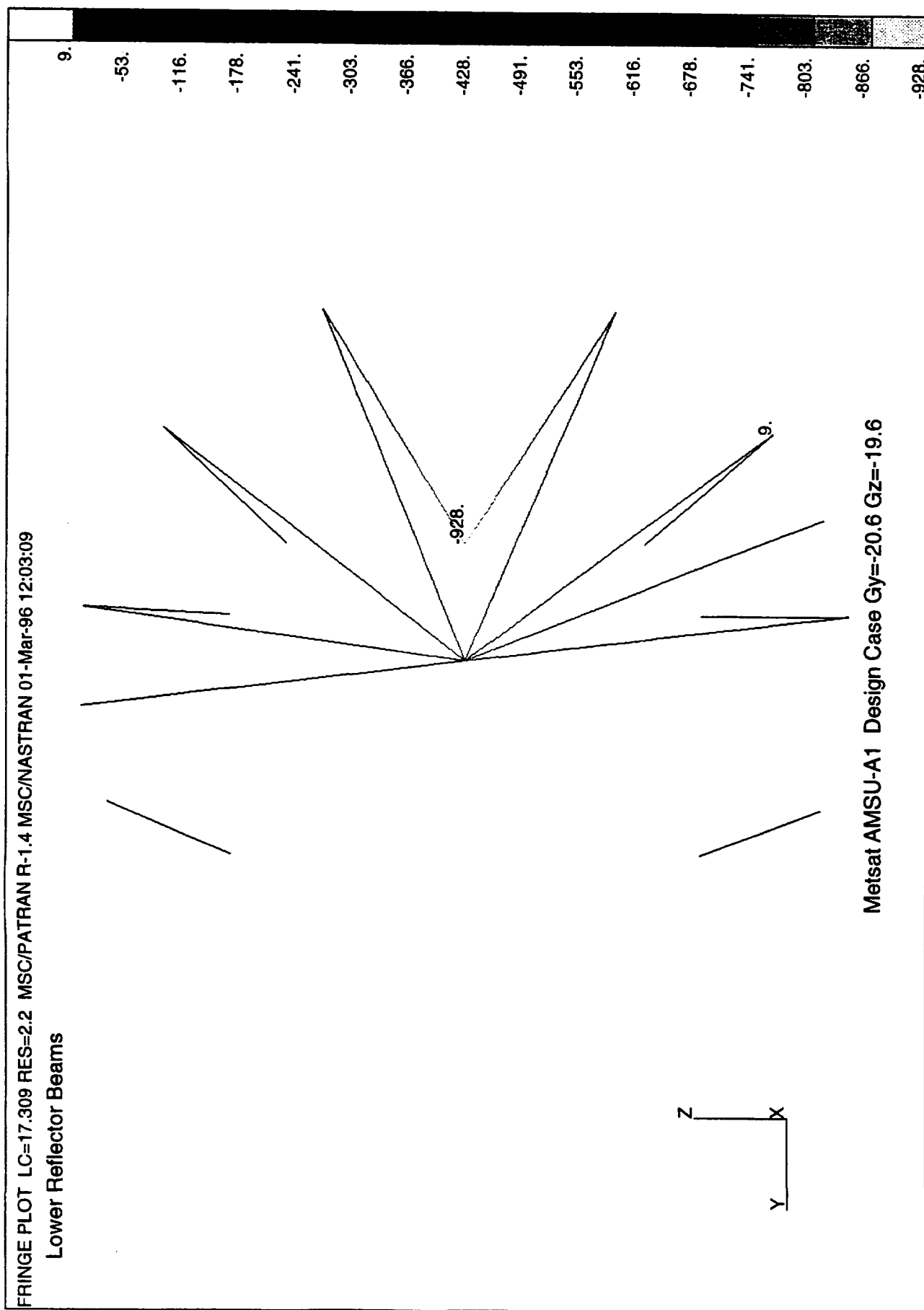
Stress Tensor

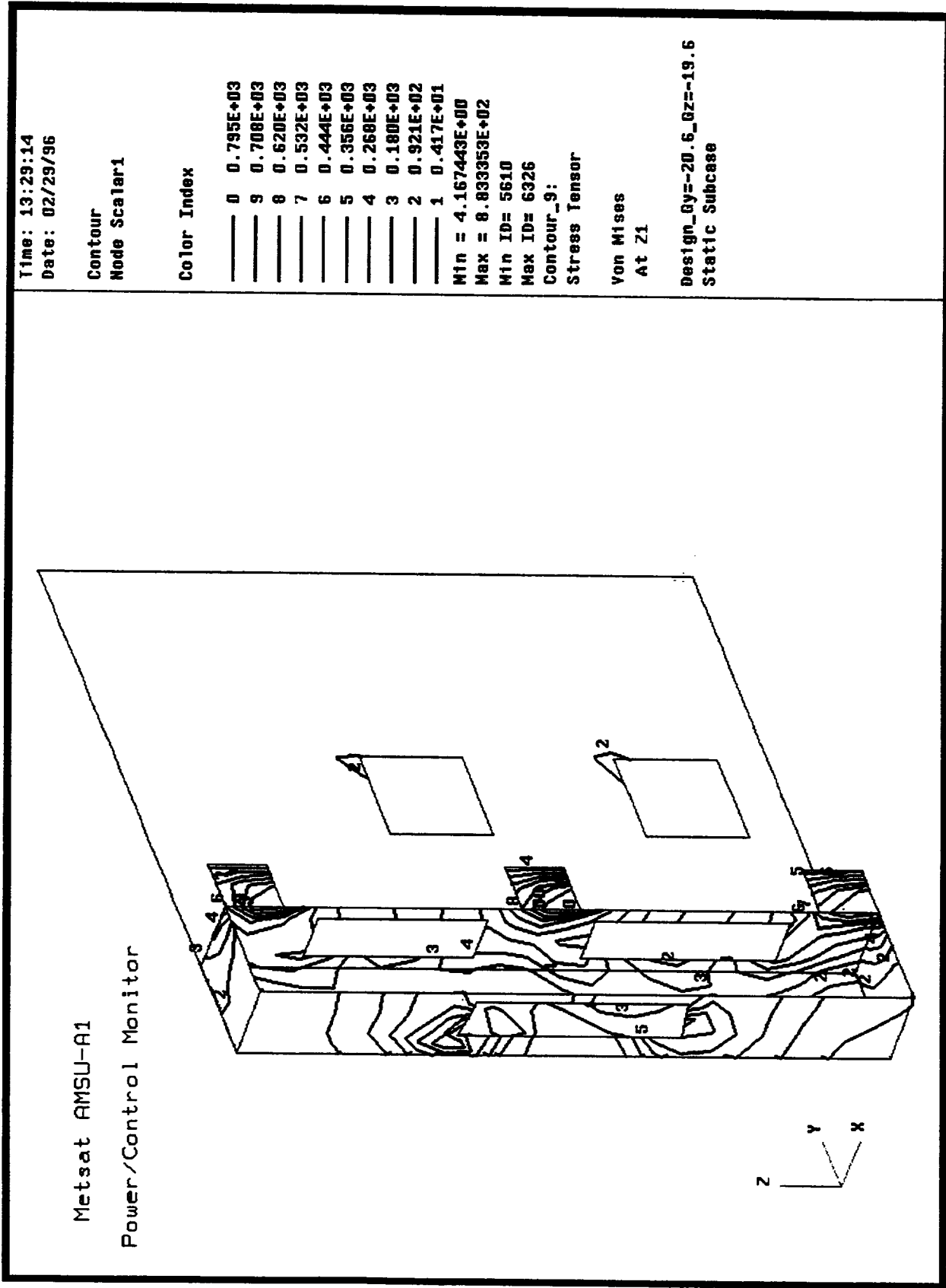
Von Mises
At Z2

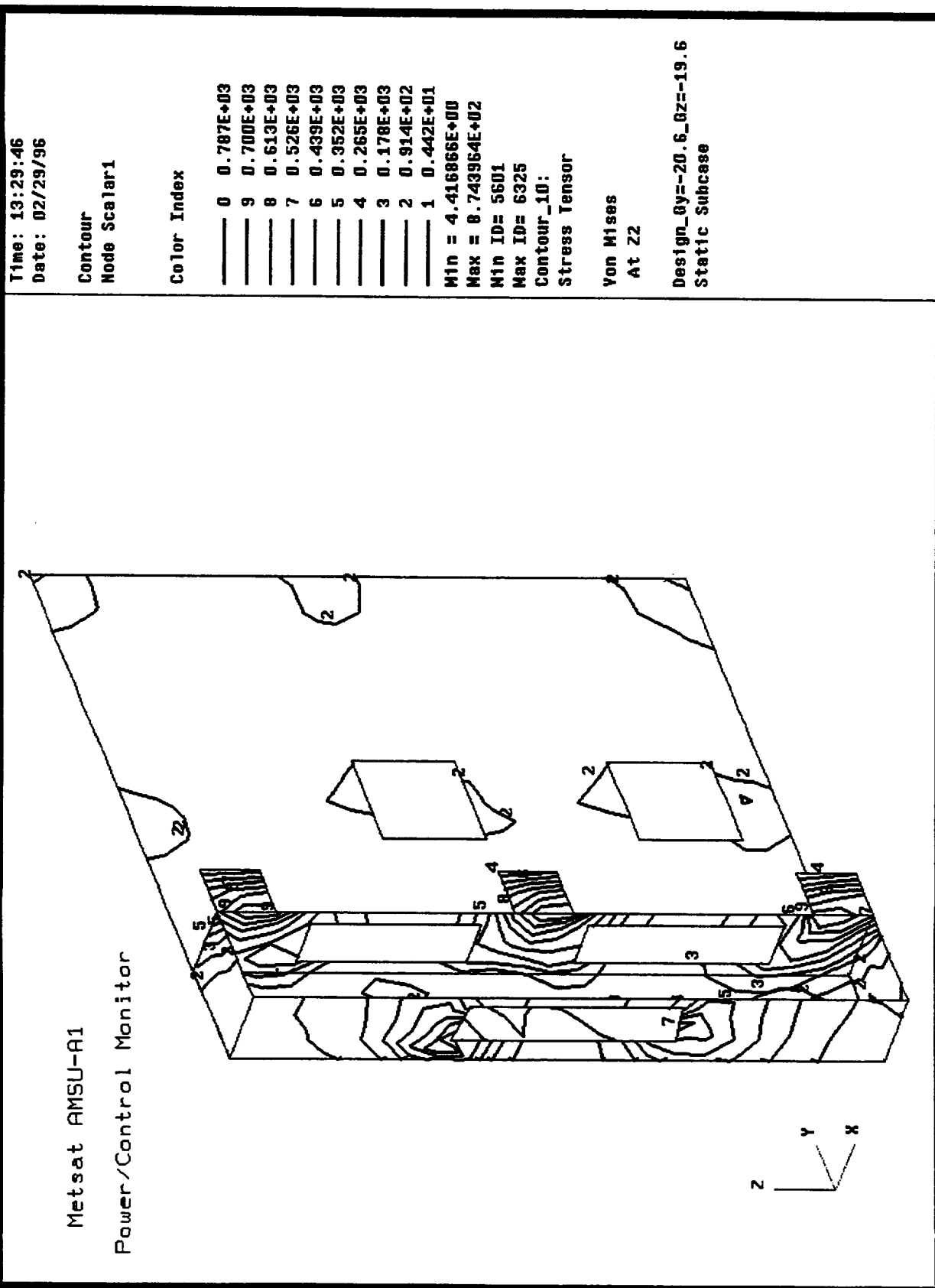
Design_0y=-20.6_0z=-19.6
Static Subcase

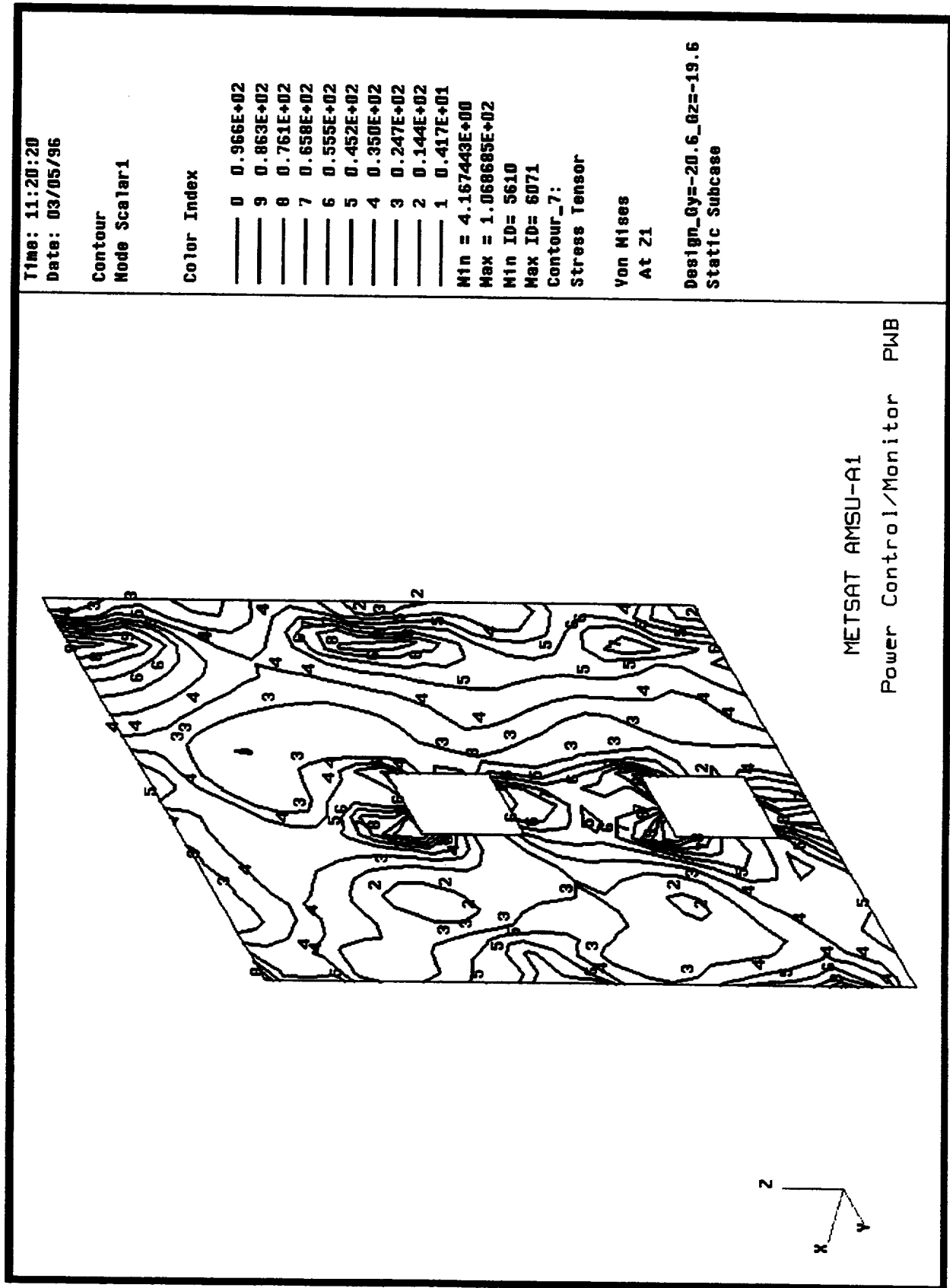












Time: 11:17:58
Date: 03/05/96

Contour
Node Scalar1

Color Index

0	0.169E+03
1	0.151E+03
2	0.133E+03
3	0.114E+03
4	0.961E+02
5	0.778E+02
6	0.594E+02
7	0.411E+02
8	0.228E+02
9	0.442E+01

Min = 4.41686E+00

Max = 1.878169E+02

Min ID= 5601

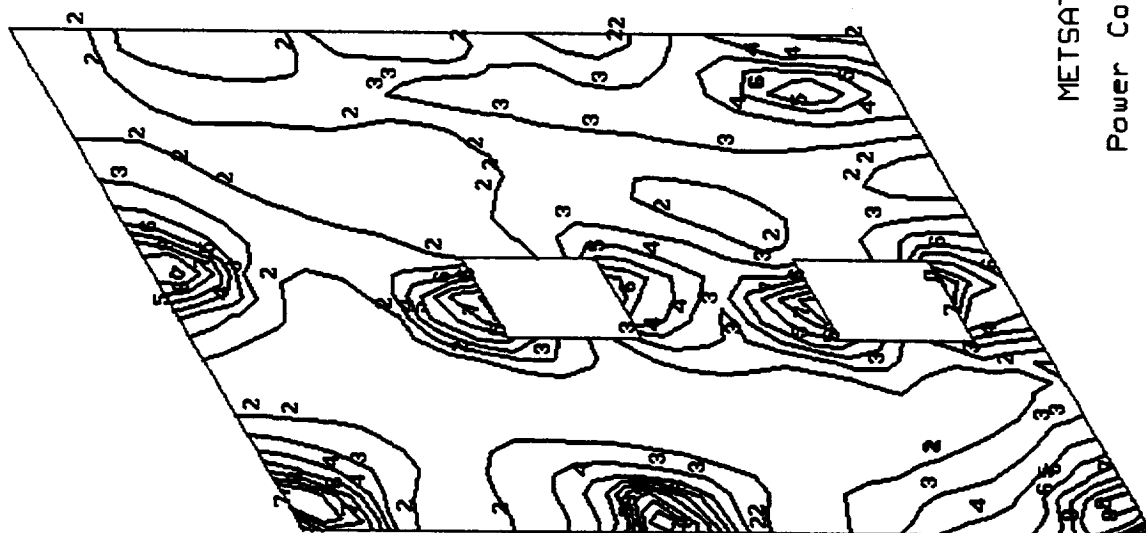
Max ID= 6253

Contour_8:

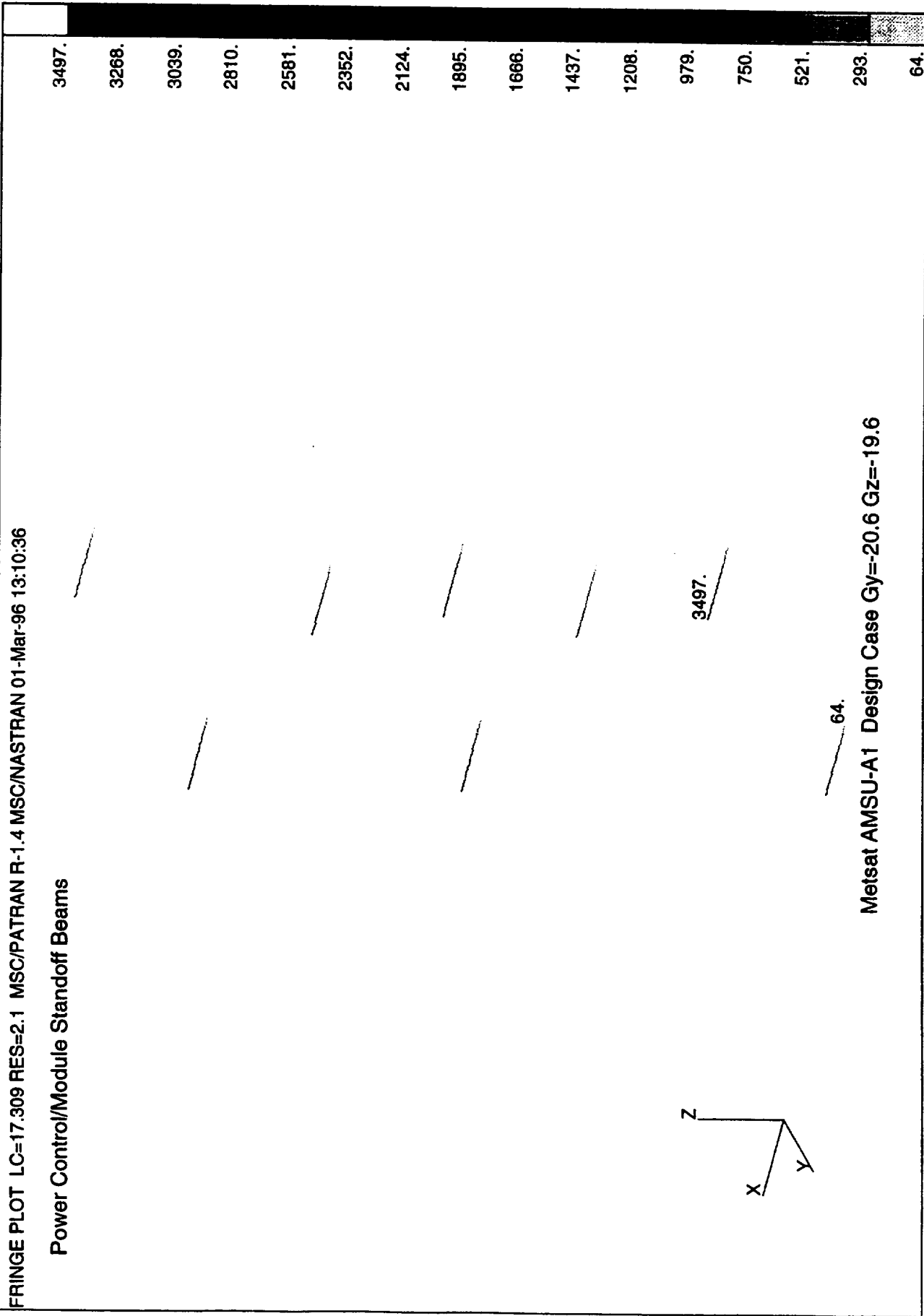
Stress Tensor

Von Mises
At Z2

Design_Oy=-20.6_Oz=-19.6
Static Subcase

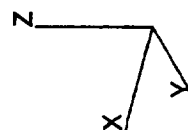


METSAT AMSU-A1
Power Control/Monitor PWB



FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:10:43

Power Control/Module Standoff Beams

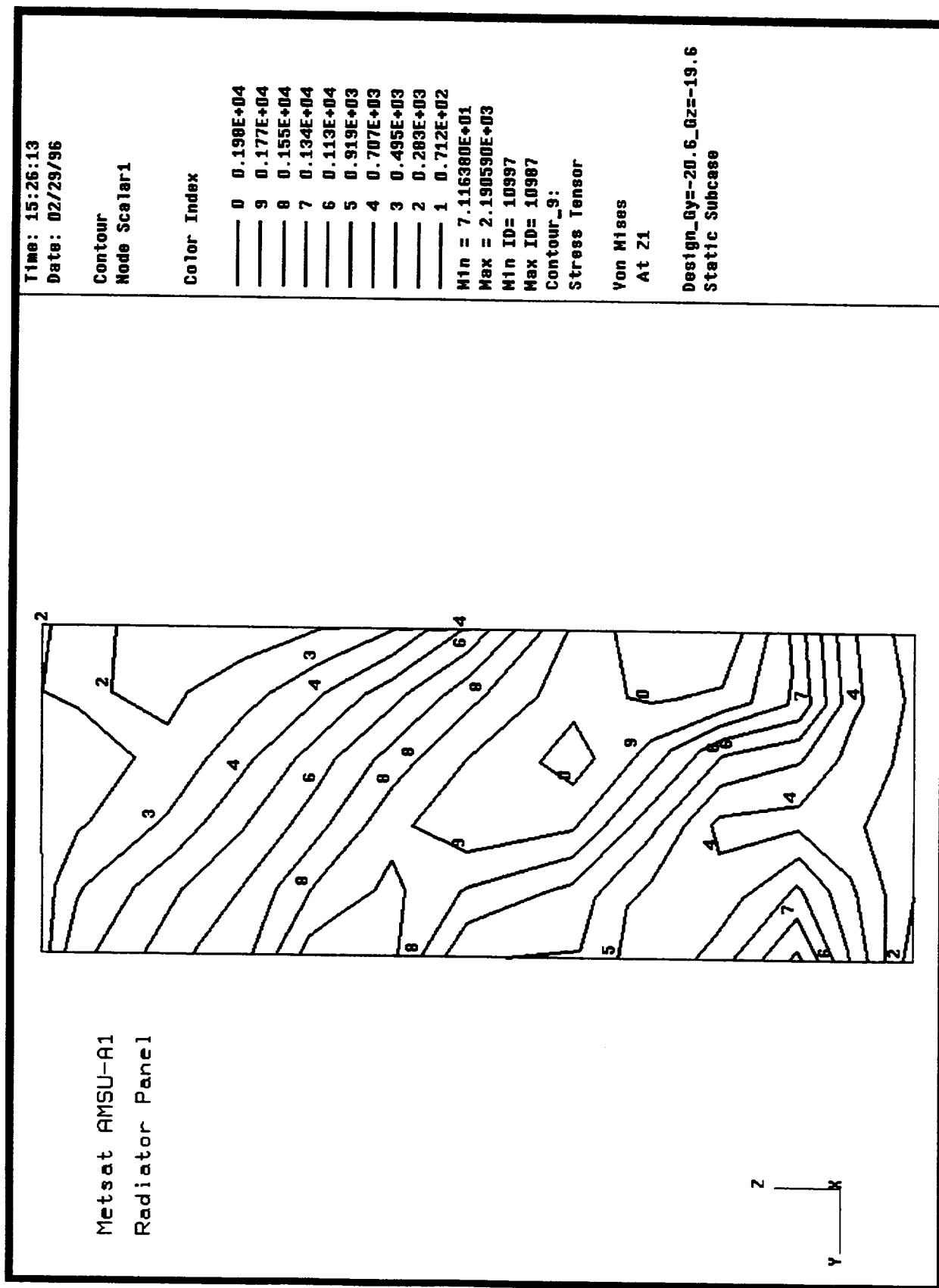


-3498.

-63.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

-63.
-292.
-521.
-750.
-979.
-1208.
-1437.
-1666.
-1895.
-2124.
-2353.
-2582.
-2811.
-3040.
-3269.
-3498.



Time: 15:26:37
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.197E+04
9	0.175E+04
8	0.154E+04
7	0.132E+04
6	0.111E+04
5	0.895E+03
4	0.680E+03
3	0.465E+03
2	0.250E+03
1	0.354E+02

Min = 3.539753E+01
Max = 2.183353E+03

Min ID= 10974

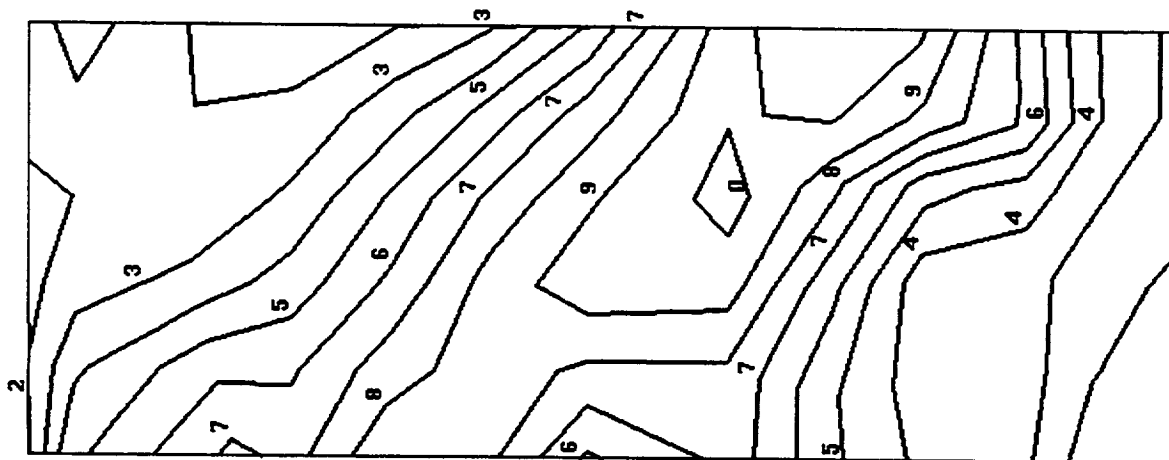
Max ID= 10899

Contour_ID:

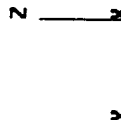
Stress Tensor

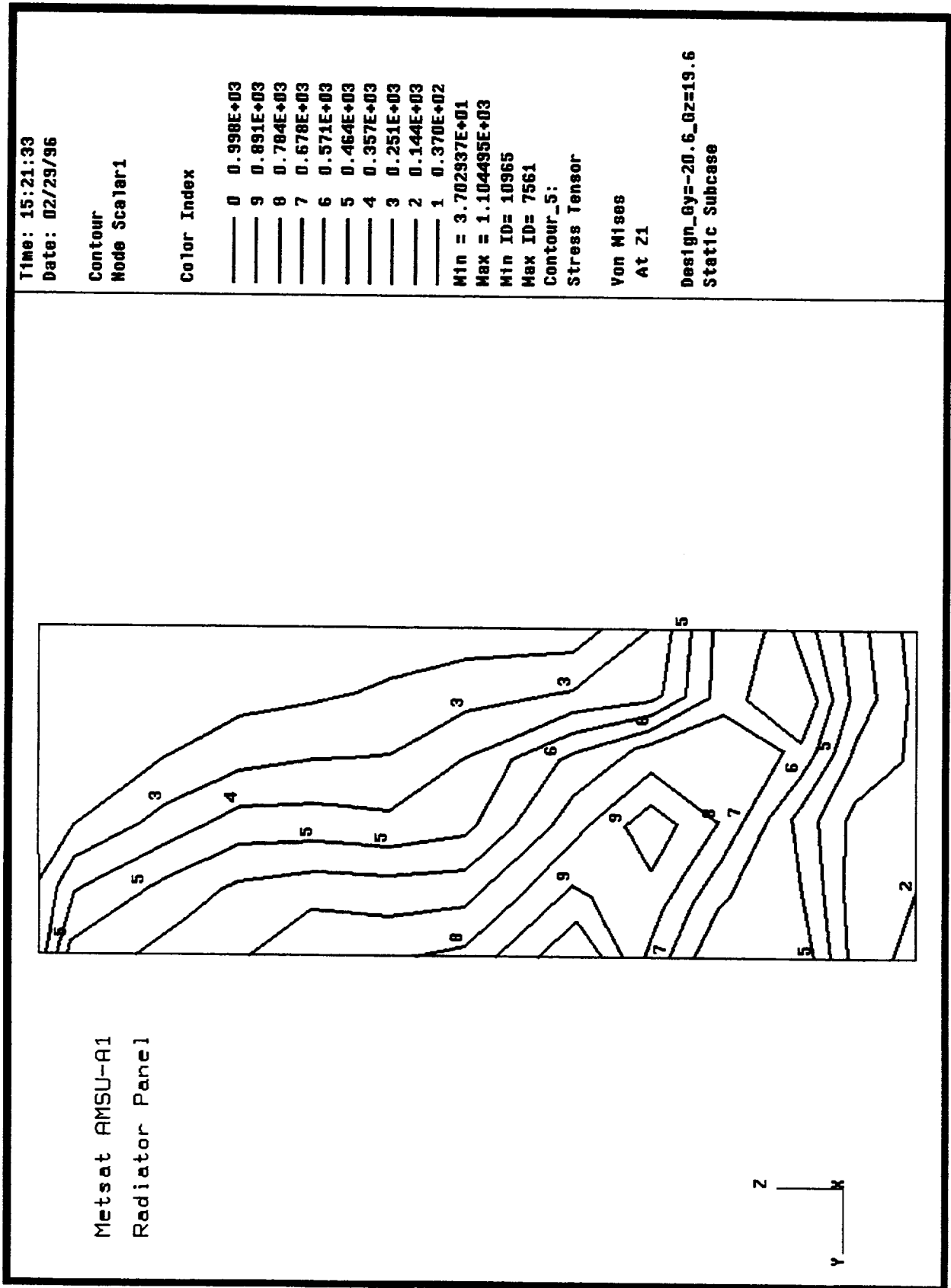
Von Mises
At 22

Design_Qy=-20.6_Qz=-19.6
Static Subcase



Metso AMSU-A1
Radiator Panel





Time: 15:23:41
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.105E+04
9	0.937E+03
8	0.825E+03
7	0.713E+03
6	0.601E+03
5	0.489E+03
4	0.377E+03
3	0.265E+03
2	0.153E+03
1	0.408E+02

Min = 4.085151E+01

Max = 1.161586E+03

Min ID= 11001

Max ID= 10902

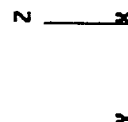
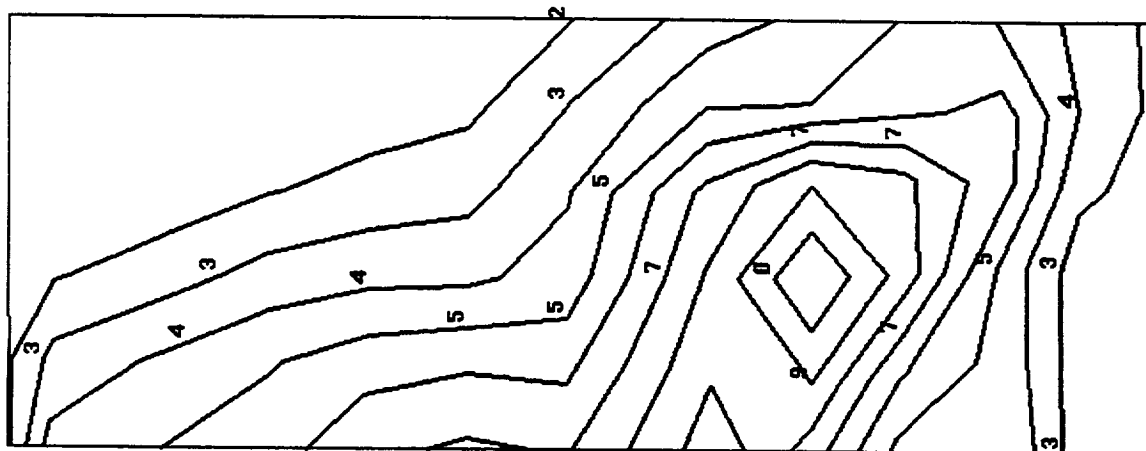
Contour_6:

Stress Tensor

Von Mises

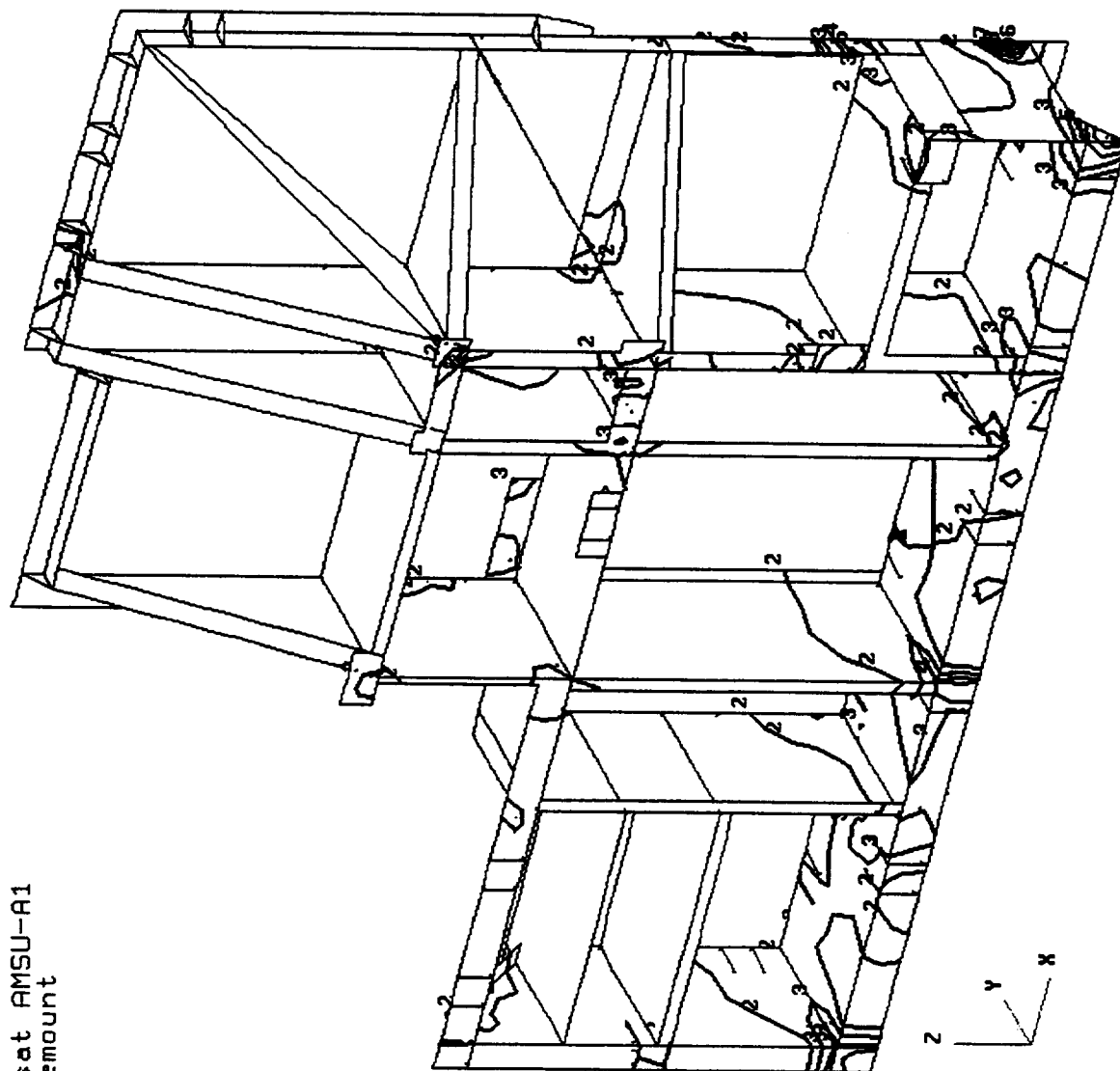
At Z2

Design_0y=-20.6_0z=19.6
Static Subcase



Metsat AMSU-A1
Radiator Panel

Metsat AMSU-A1
Sidemount



Time: 11:19:30
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.885E+04
9	0.787E+04
8	0.689E+04
7	0.590E+04
6	0.492E+04
5	0.394E+04
4	0.295E+04
3	0.197E+04
2	0.989E+03
1	0.547E+01

Min = 5.470410E+00

Max = 9.835984E+03

Min ID= 9422

Max ID= 1206

Contour_9:

Stress Tensor

Von Mises

At Z1

Design_Gy=-20.6_Gz=-19.6
Static Subcase

Metsat AMSU-A1
Sidemount

Time: 11:17:03
Date: 02/29/96

Contour
Node Scalar1

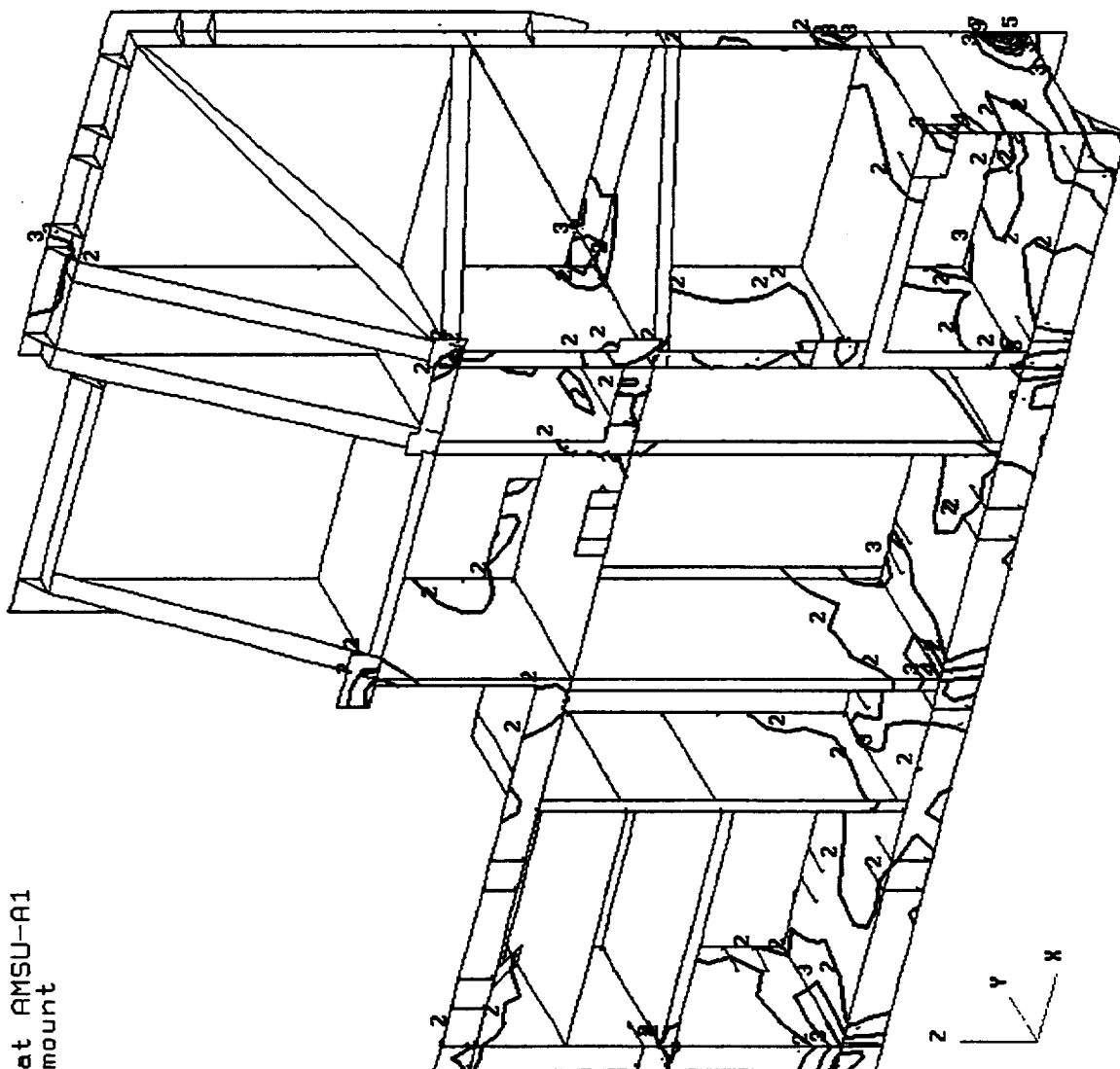
Color Index

0	0.668E+04
9	0.771E+04
8	0.675E+04
7	0.579E+04
6	0.482E+04
5	0.386E+04
4	0.290E+04
3	0.194E+04
2	0.973E+03
1	0.959E+01

Min = 9.595796E+00
Max = 9.639183E+03
Min ID= 9422
Max ID= 1206
Contour_10:
Stress Tensor

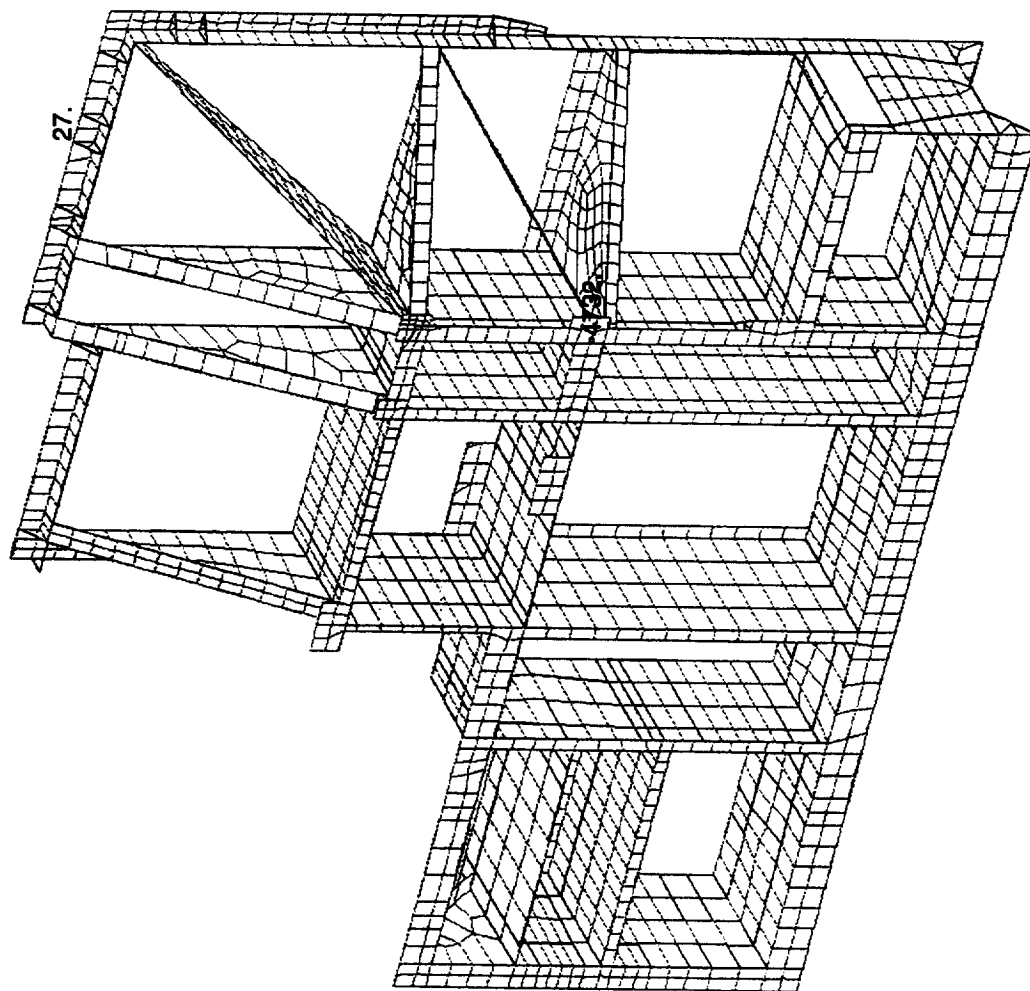
Von Mises
At Z2

Design_Qy=-20.6_Qz=-19.6
Static Subcase



FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 08:44:02

Sidemount Beams

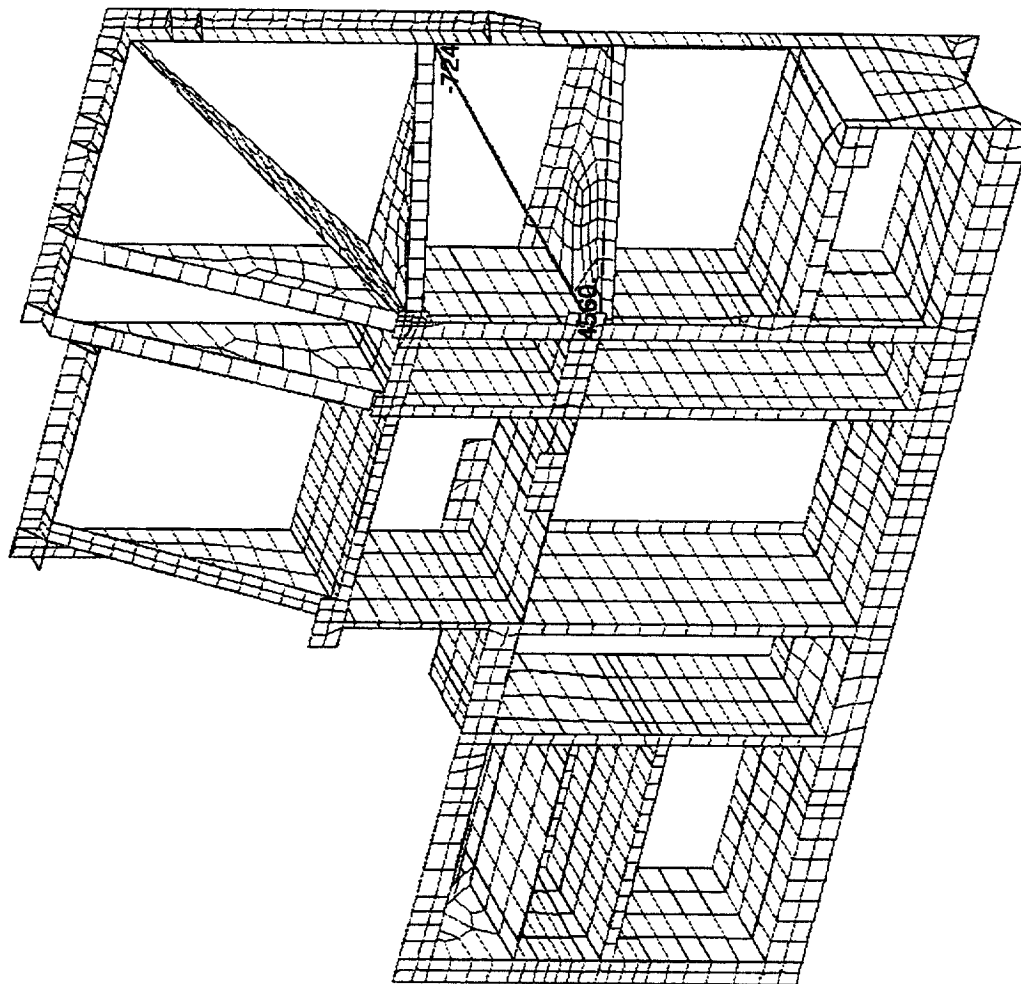


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

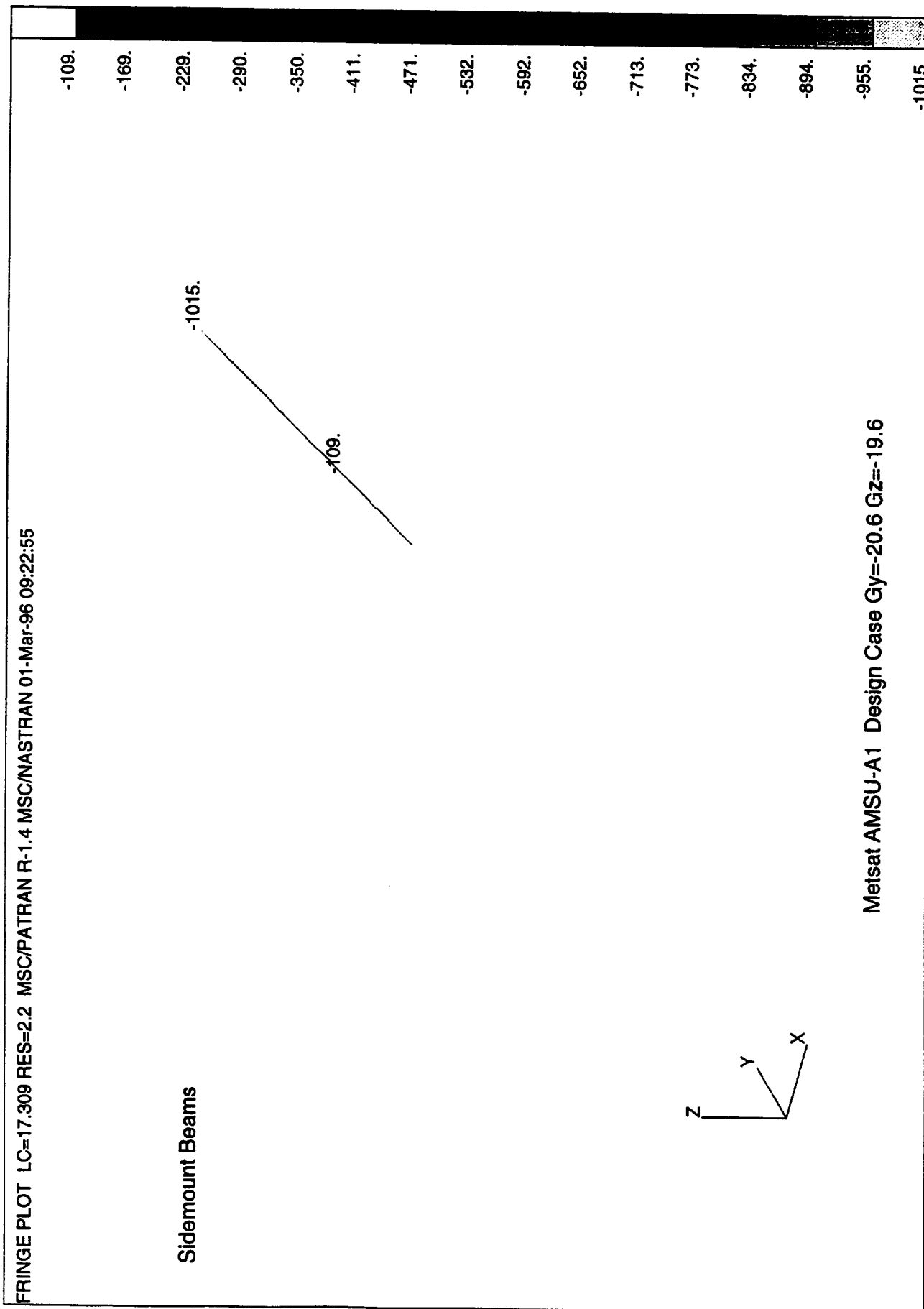
27.
-290.
-608.
-925.
-1242.
-1559.
-1876.
-2194.
-2511.
-2828.
-3145.
-3463.
-3780.
-4097.
-4414.
-4732.

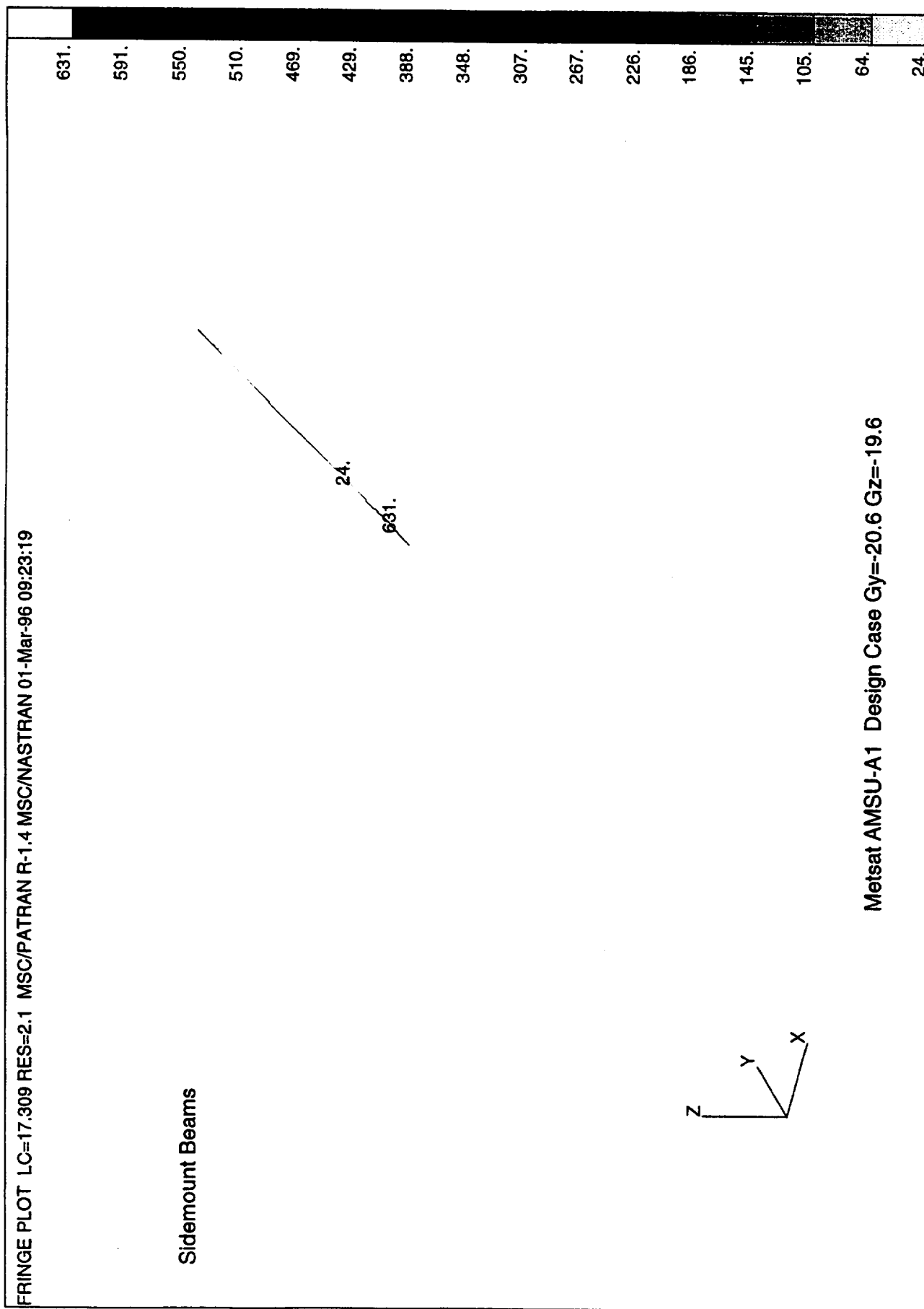
FRINGE PLOT LC=17.309 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 08:43:46

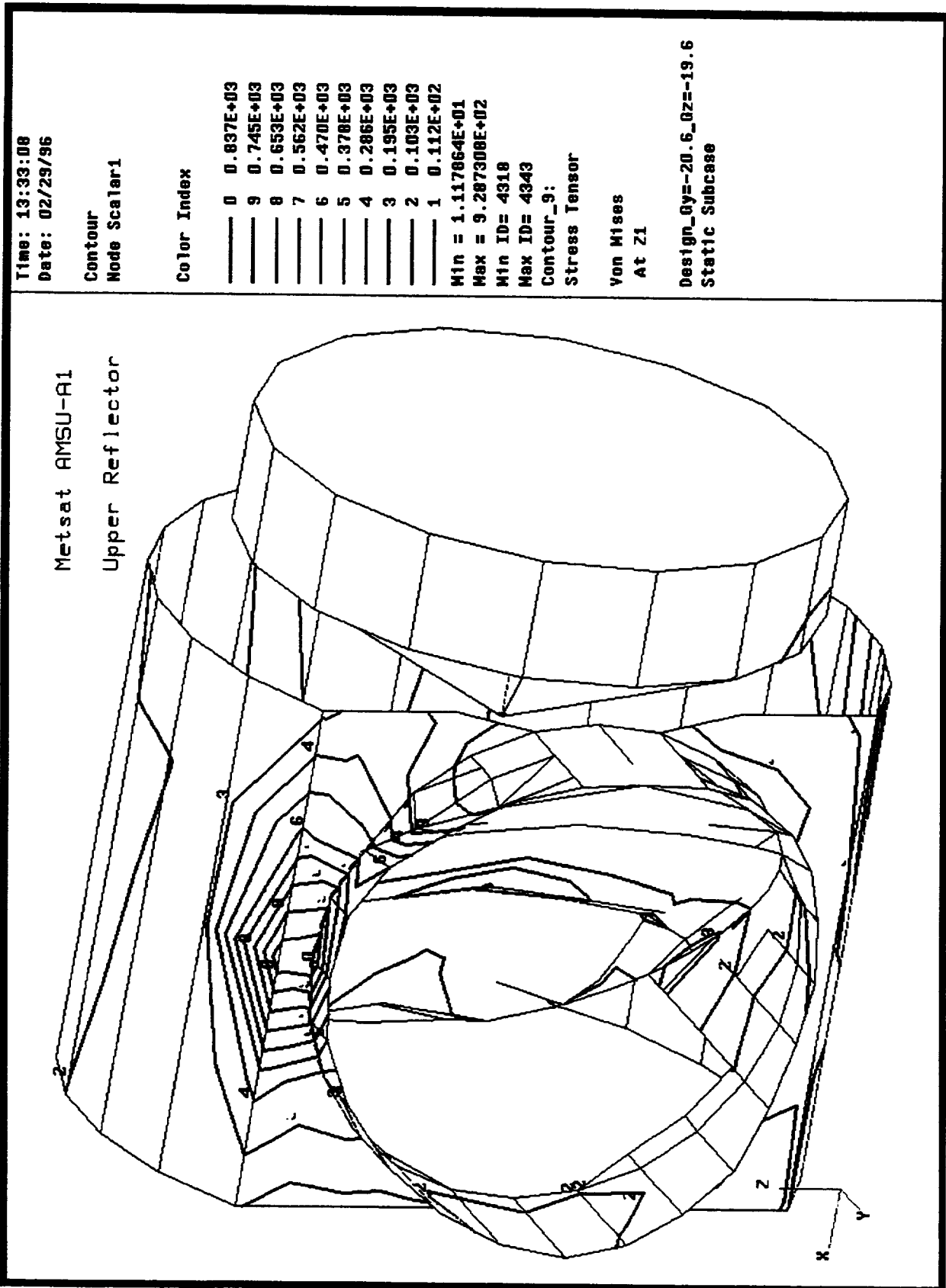
Sidemount Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

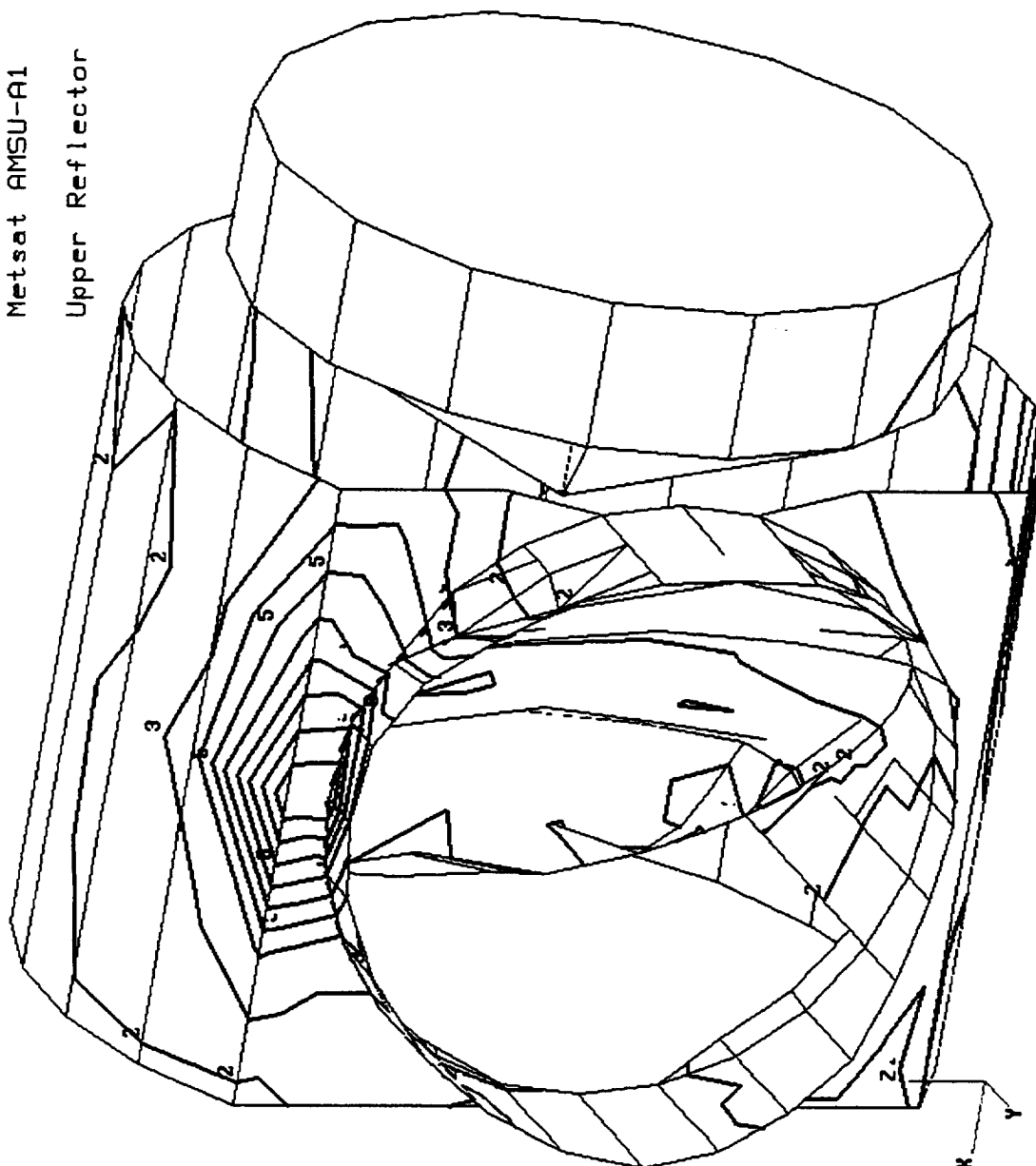






Time: 13:32:11
Date: 02/29/96

Metsat AMSU-A1
Upper Reflector



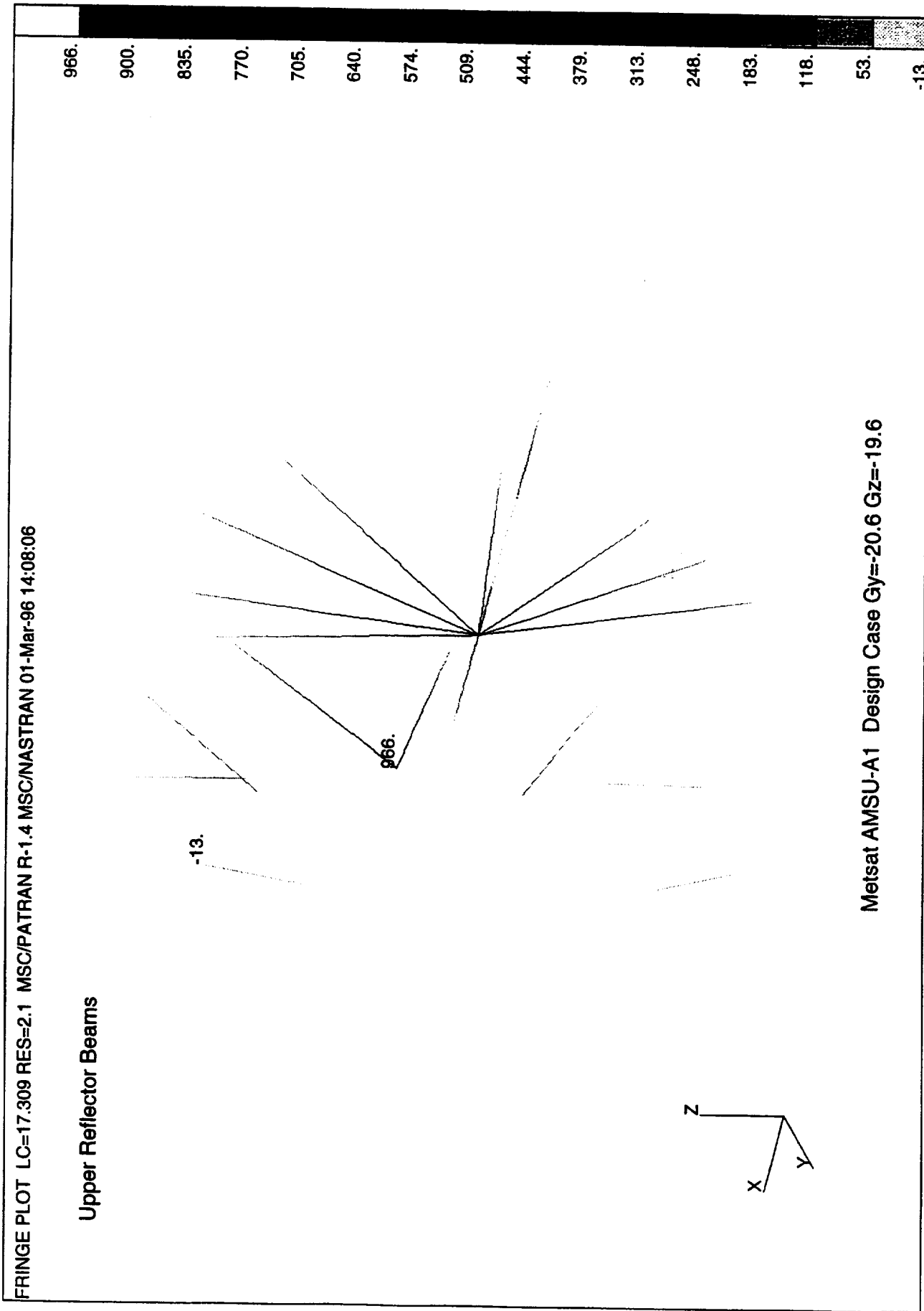
Contour
Node Scalar1

Color Index	
0	0.831E+03
9	0.741E+03
8	0.651E+03
7	0.561E+03
6	0.470E+03
5	0.380E+03
4	0.290E+03
3	0.200E+03
2	0.110E+03
1	0.193E+02

Min = 1.932592E+01
Max = 9.216105E+02
Min ID= 4320
Max ID= 4343
Contour_10:
Stress Tensor

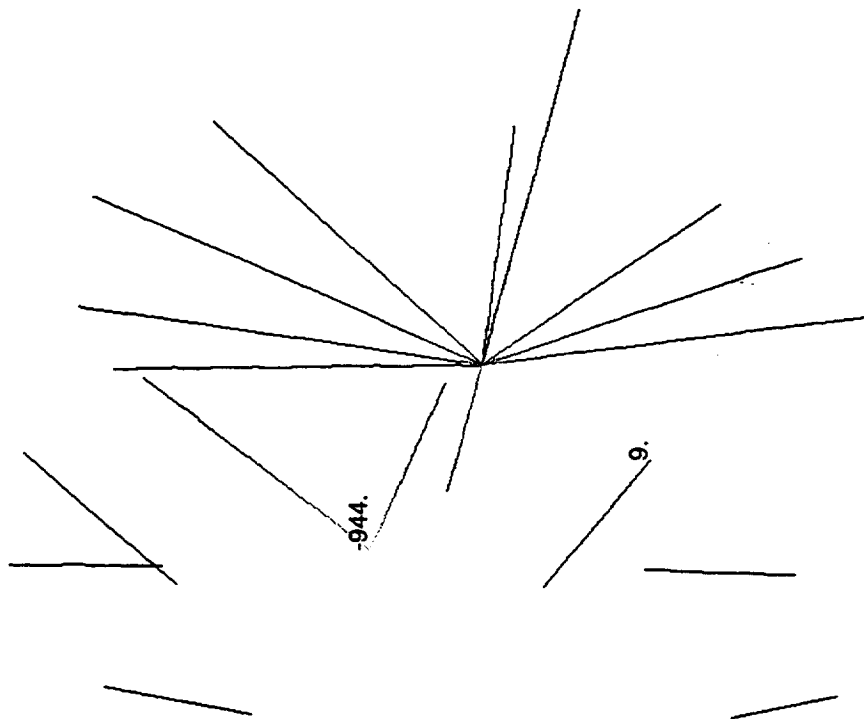
Von Mises
At 22

Design_Gy=-20.6_Gz=-19.6
Static Subcase



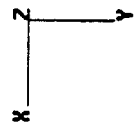
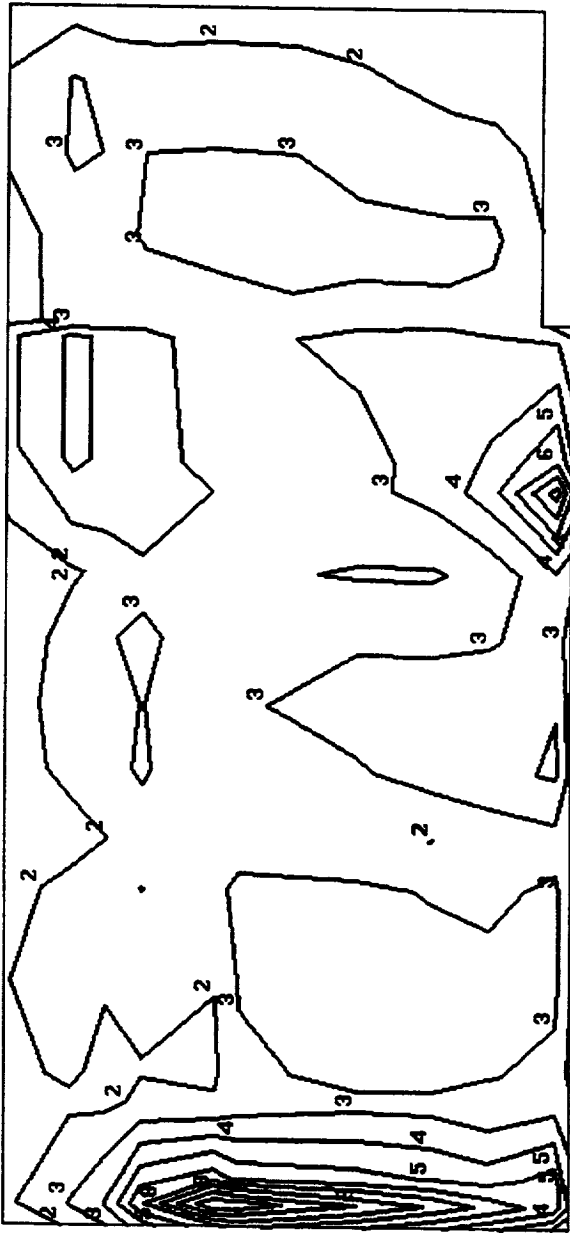
FRINGE PLOT LC=17.309 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:08:11

Upper Reflector Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=-19.6

Metsat AMSU-A1
Lower Baseplate



Time: 16:02:50
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.179E+04
1	0.159E+04
2	0.140E+04
3	0.120E+04
4	0.101E+04
5	0.810E+03
6	0.614E+03
7	0.418E+03
8	0.222E+03
9	0.261E+02

Min = 2.612107E+01
Max = 1.986319E+03
Min ID= 1172
Max ID= 1094
Contour_5:
Stress Tensor

Von Mises
At Z1

Design_Gy=-20.6_0z=19.6
Static Subcase

Time: 16:02:29
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.194E+04
9	0.173E+04
8	0.152E+04
7	0.131E+04
6	0.110E+04
5	0.889E+03
4	0.679E+03
3	0.470E+03
2	0.261E+03
1	0.512E+02

Min = 5.119346E+01

Max = 2.145021E+03

Min ID= 1172

Max ID= 1094

Contour_6:

Stress Tensor

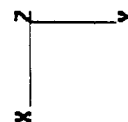
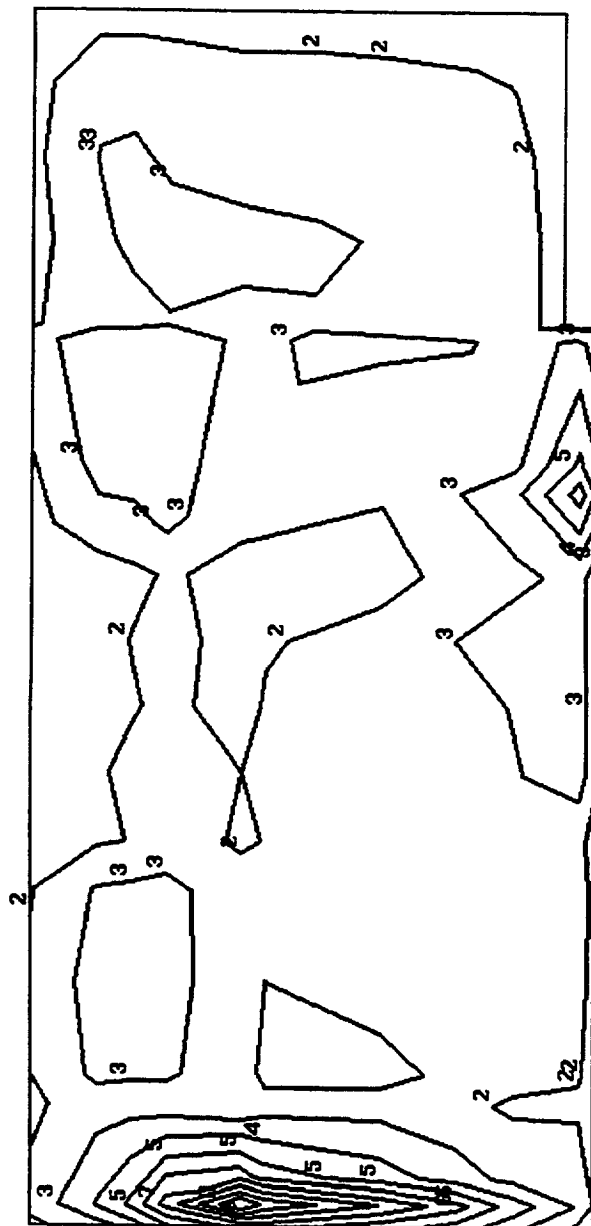
Von Mises

At Z2

Design_0y=-20.6_0z=19.6
Static Subcase

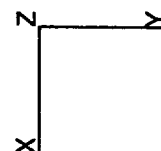
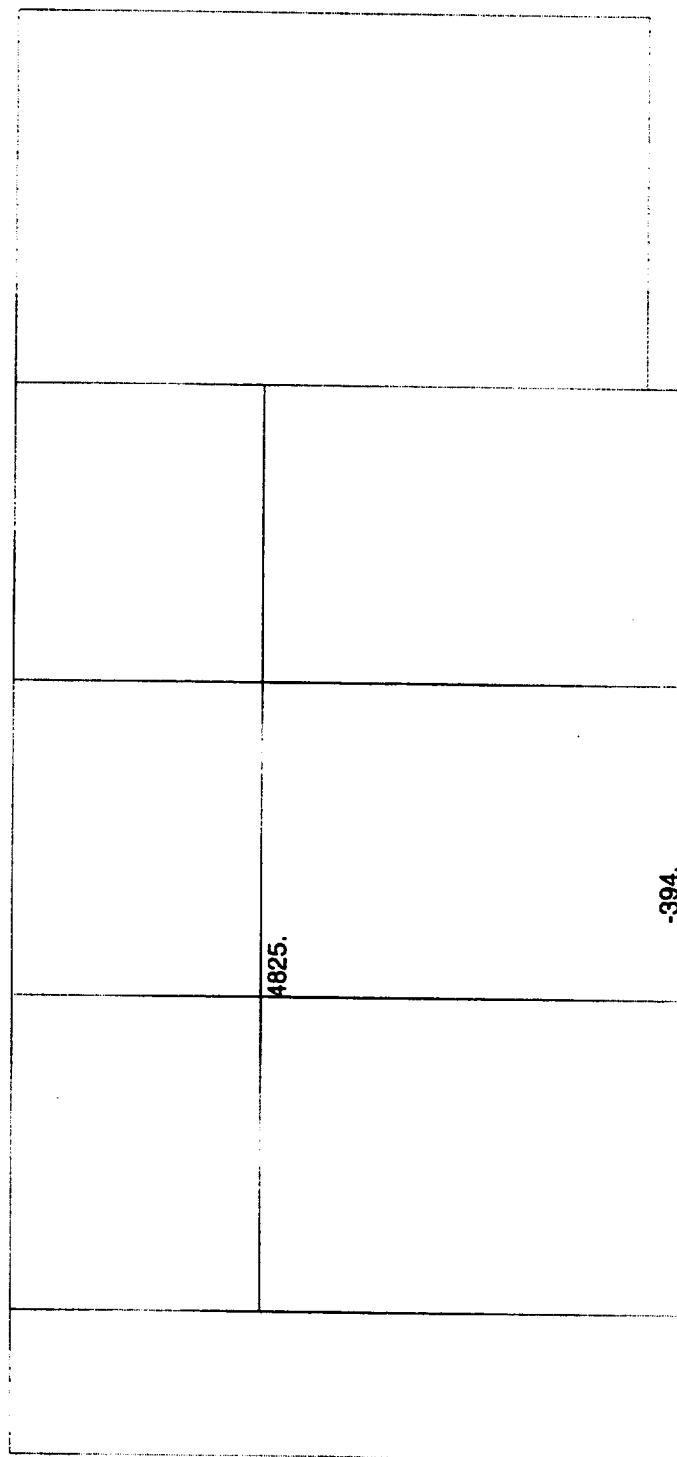
Metsat AMSU-A1

Lower Baseplate



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:26:51

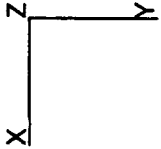
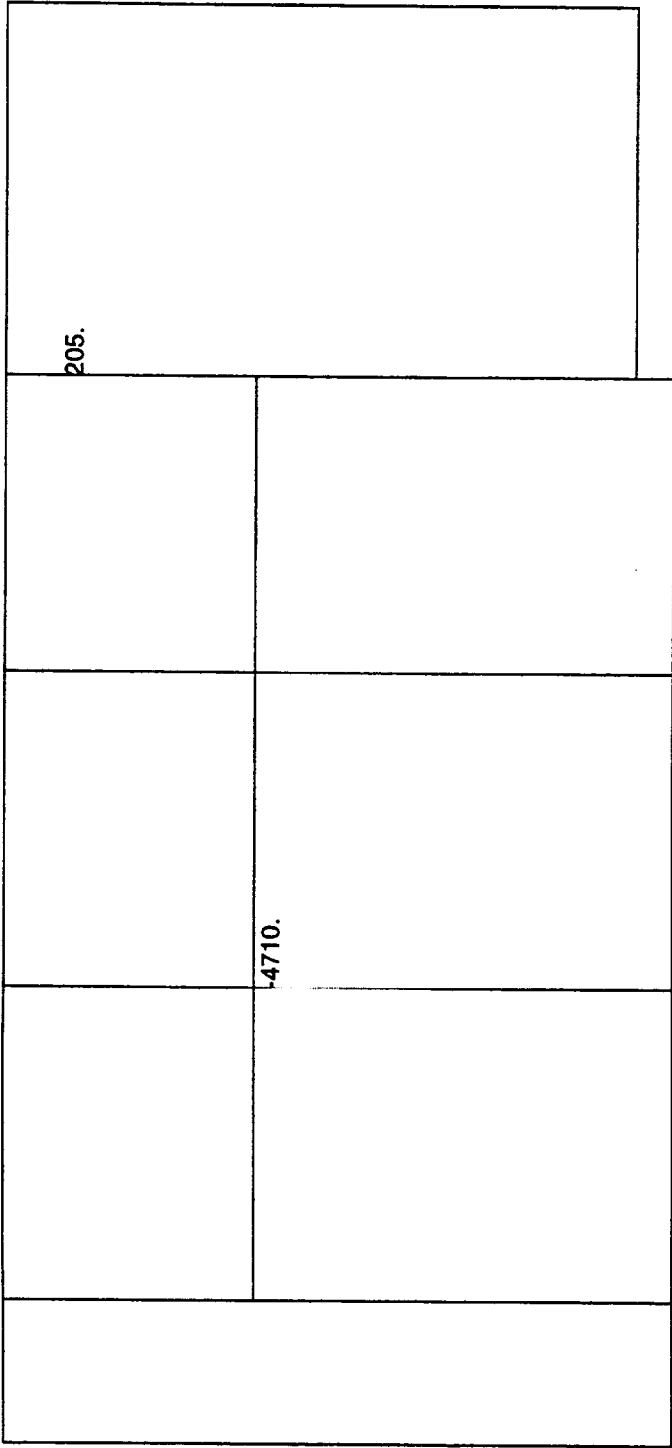
Lower Baseplate Beams



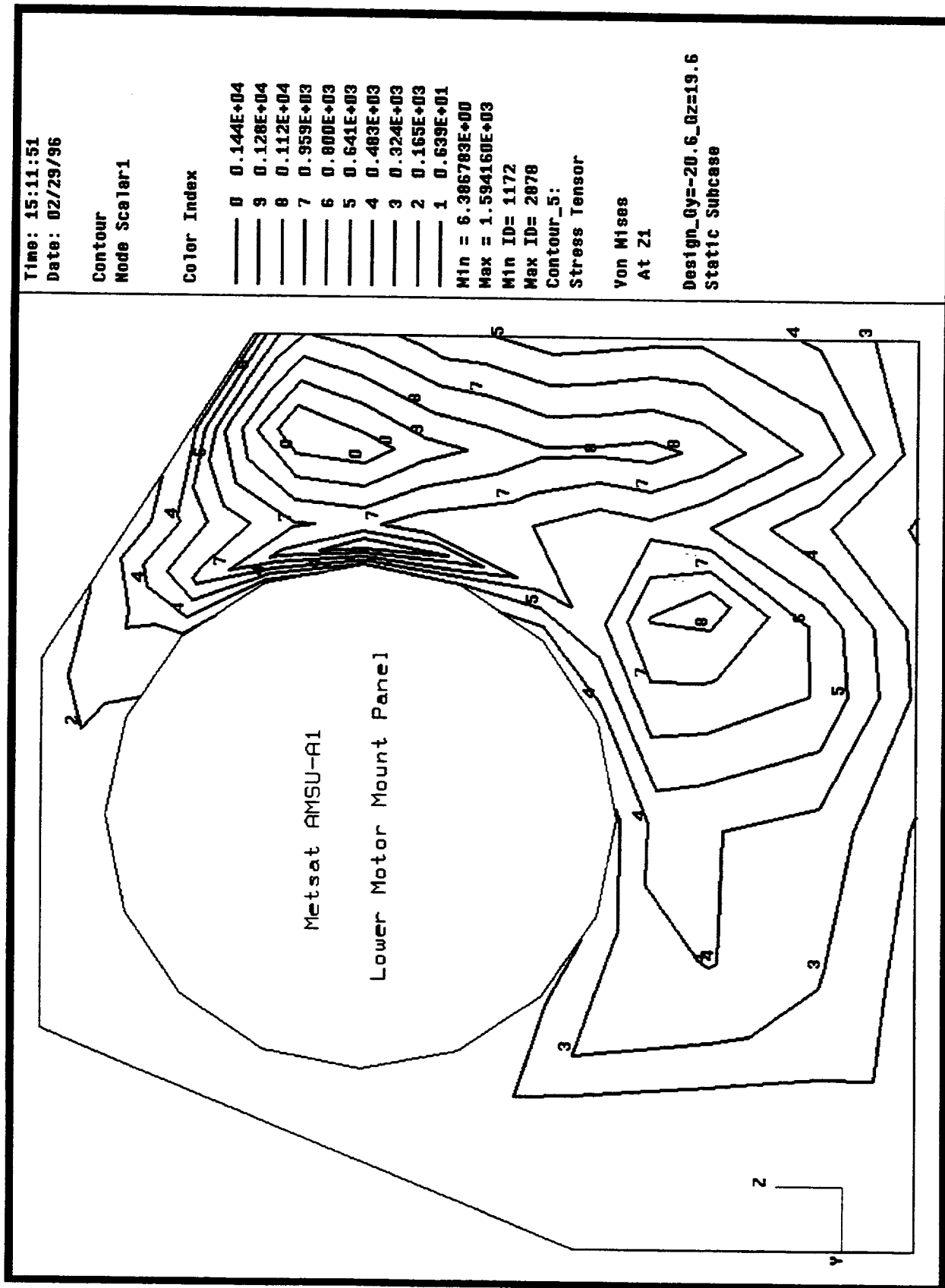
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 10:27:10

Lower Baseplate Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6



Time: 15:14:08
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.130E+04
—	9	0.116E+04
—	8	0.101E+04
—	7	0.871E+03
—	6	0.727E+03
—	5	0.583E+03
—	4	0.440E+03
—	3	0.296E+03
—	2	0.152E+03
—	1	0.872E+01

Min = 8.718714E+00

Max = 1.445379E+03

Min ID= 1172

Max ID= 2880

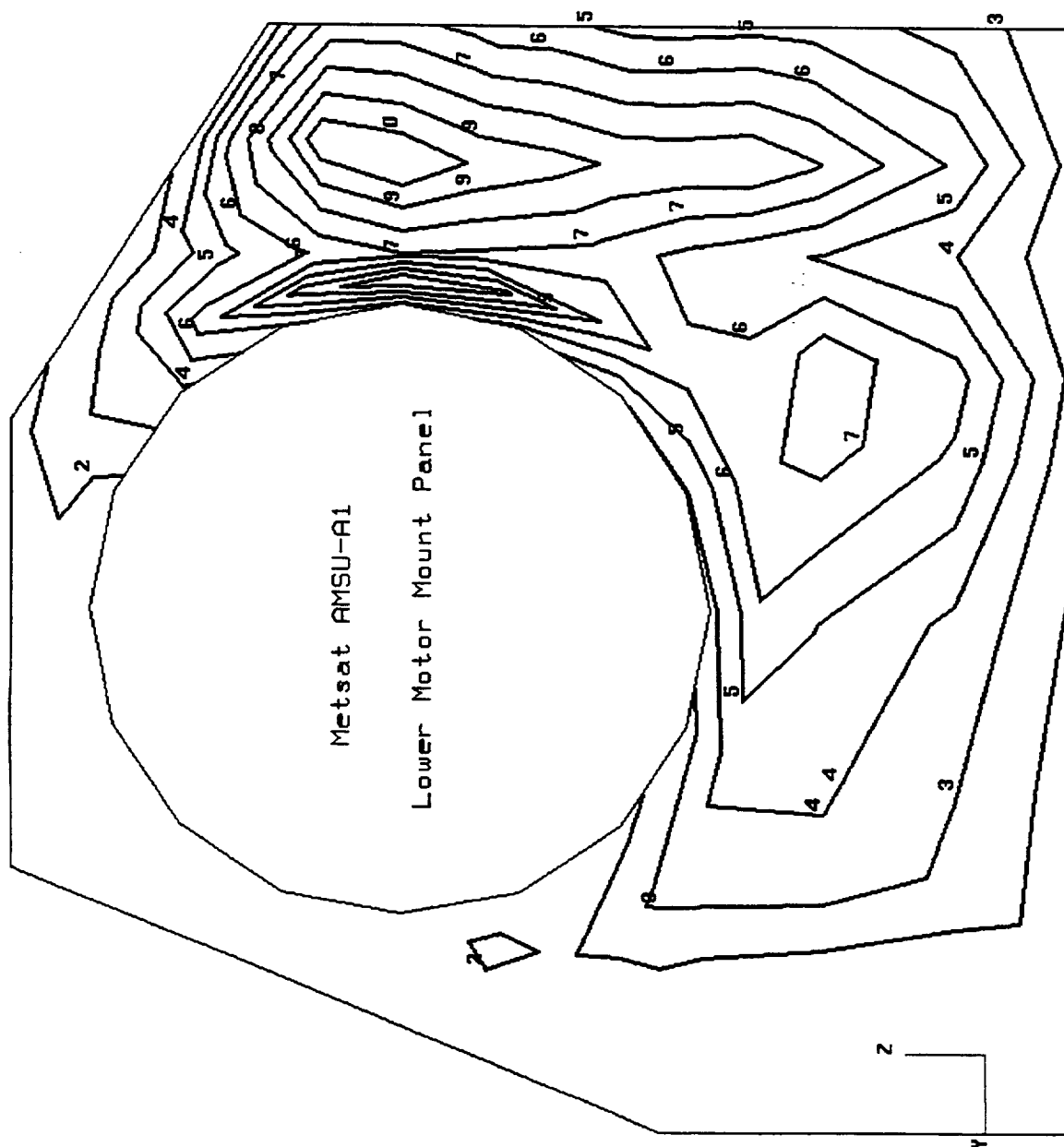
Contour_6:

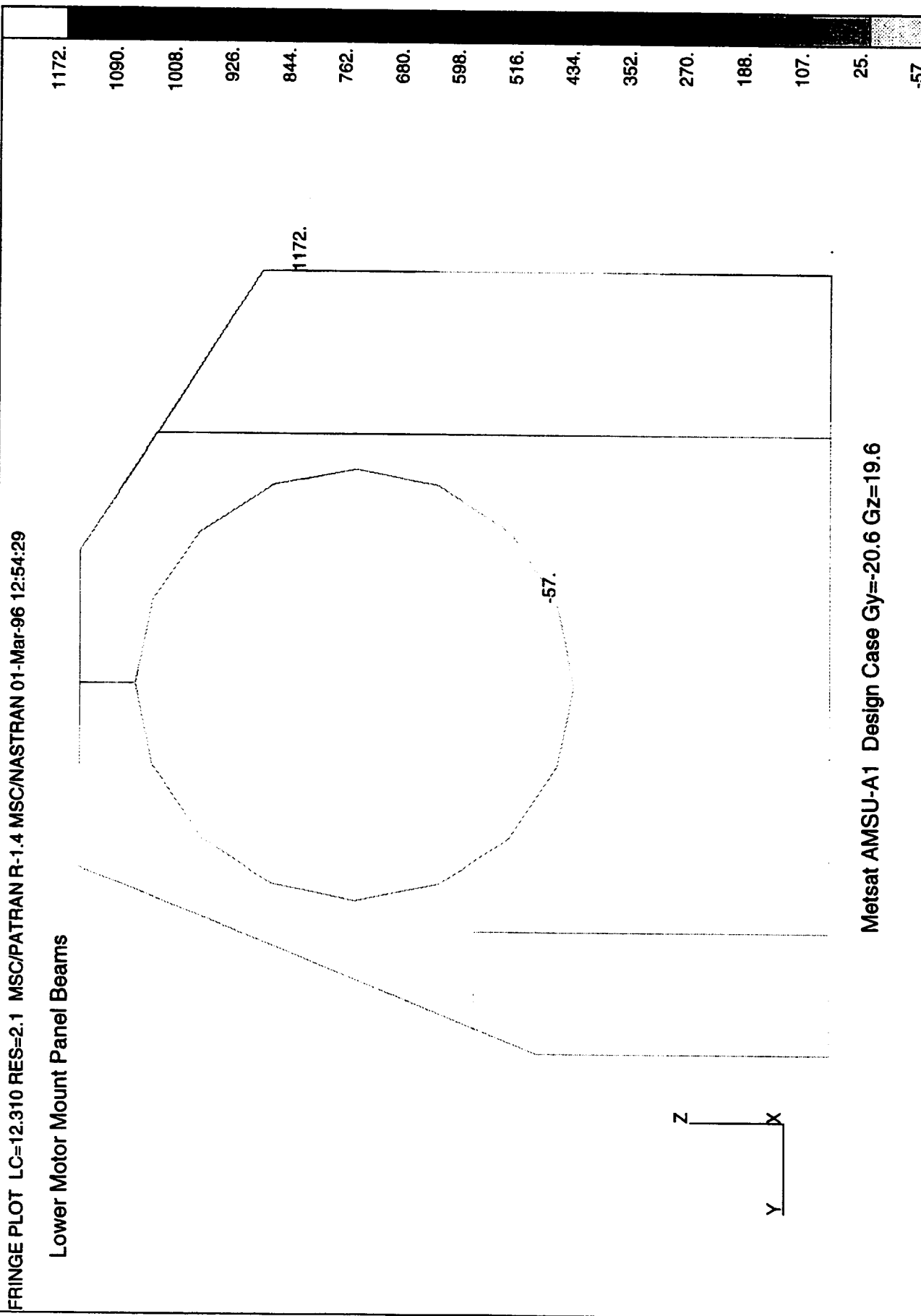
Stress Tensor

Von Mises

At Z2

Design_Qy=-20.6_Qz=19.6
Static Subcase







Time: 15:21:07
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.112E+04
1	0.999E+03
2	0.877E+03
3	0.755E+03
4	0.632E+03
5	0.510E+03
6	0.388E+03
7	0.266E+03
8	0.144E+03
9	0.215E+02

Min = 2.148117E+01

Max = 1.243308E+03

Min ID= 2779

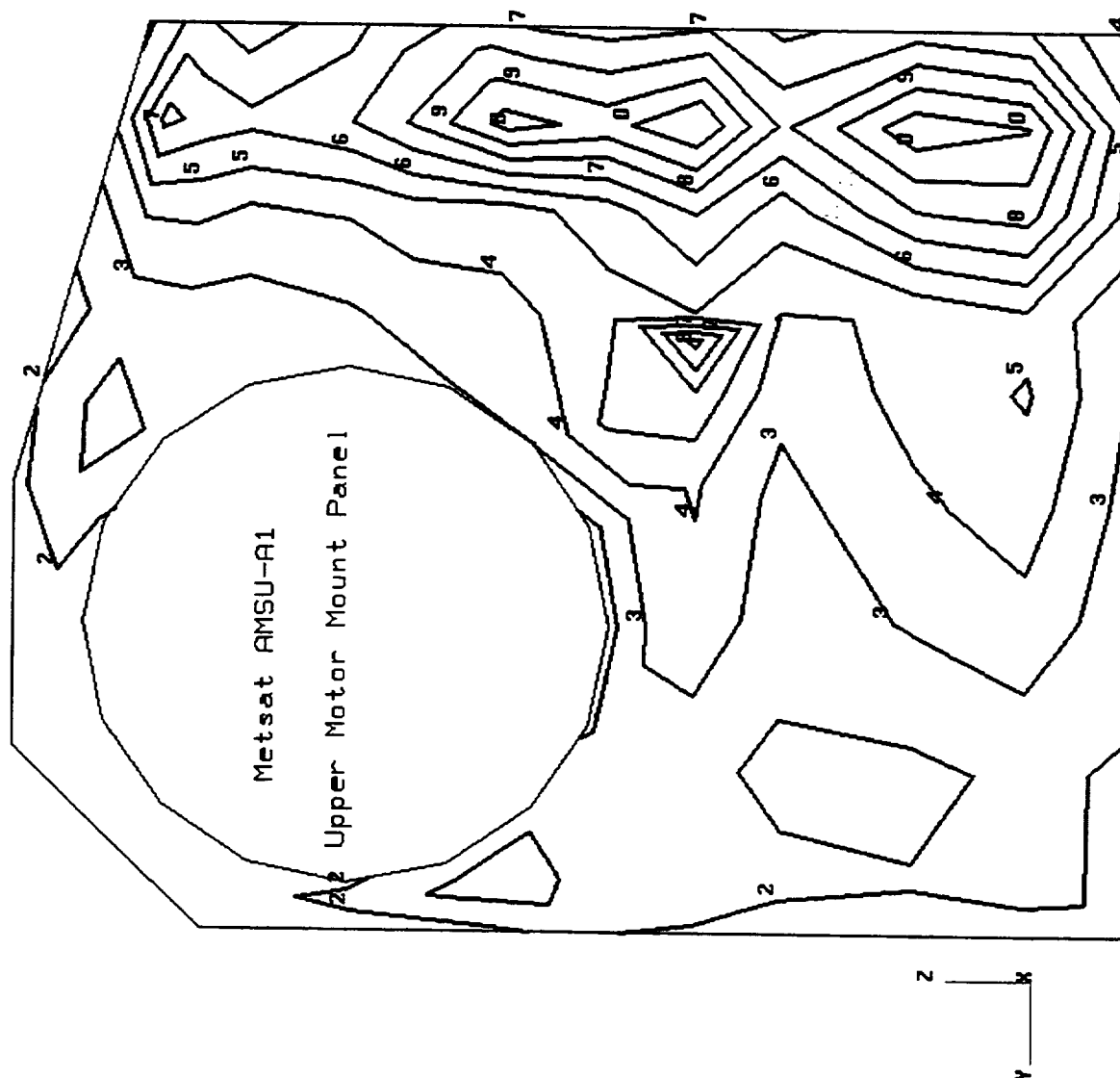
Max ID= 2745

Contour_5:

Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_gz=19.6
Static Subcase



Time: 15:20:44
Date: 02/29/96

Contour
Node Scalar1

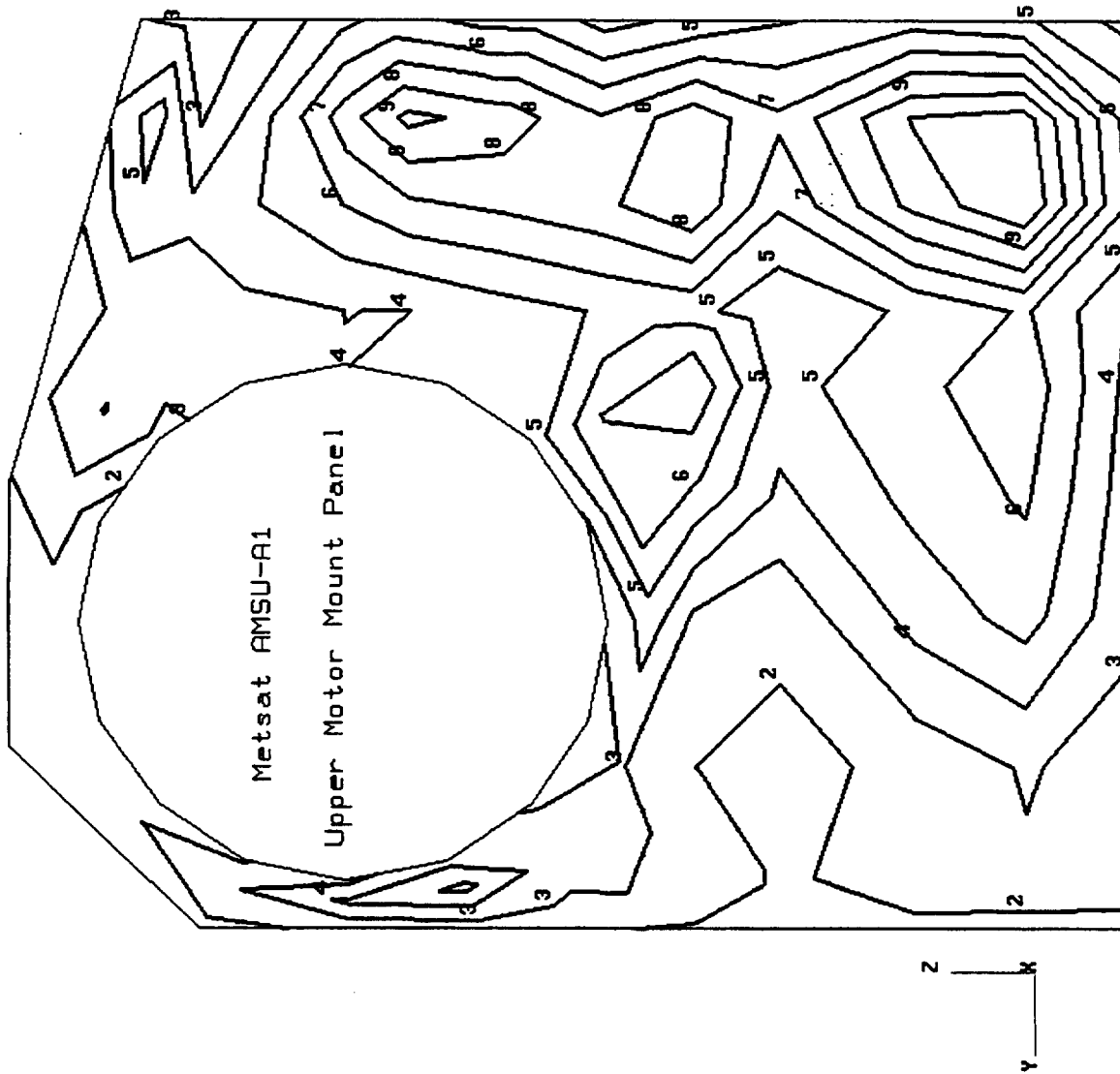
Color Index

0	0.772E+03
9	0.688E+03
8	0.605E+03
7	0.521E+03
6	0.438E+03
5	0.354E+03
4	0.271E+03
3	0.187E+03
2	0.104E+03
1	0.202E+02

Min = 2.021727E+01
Max = 8.554368E+02
Min ID= 2779
Max ID= 2717
Contour_6:
Stress Tensor

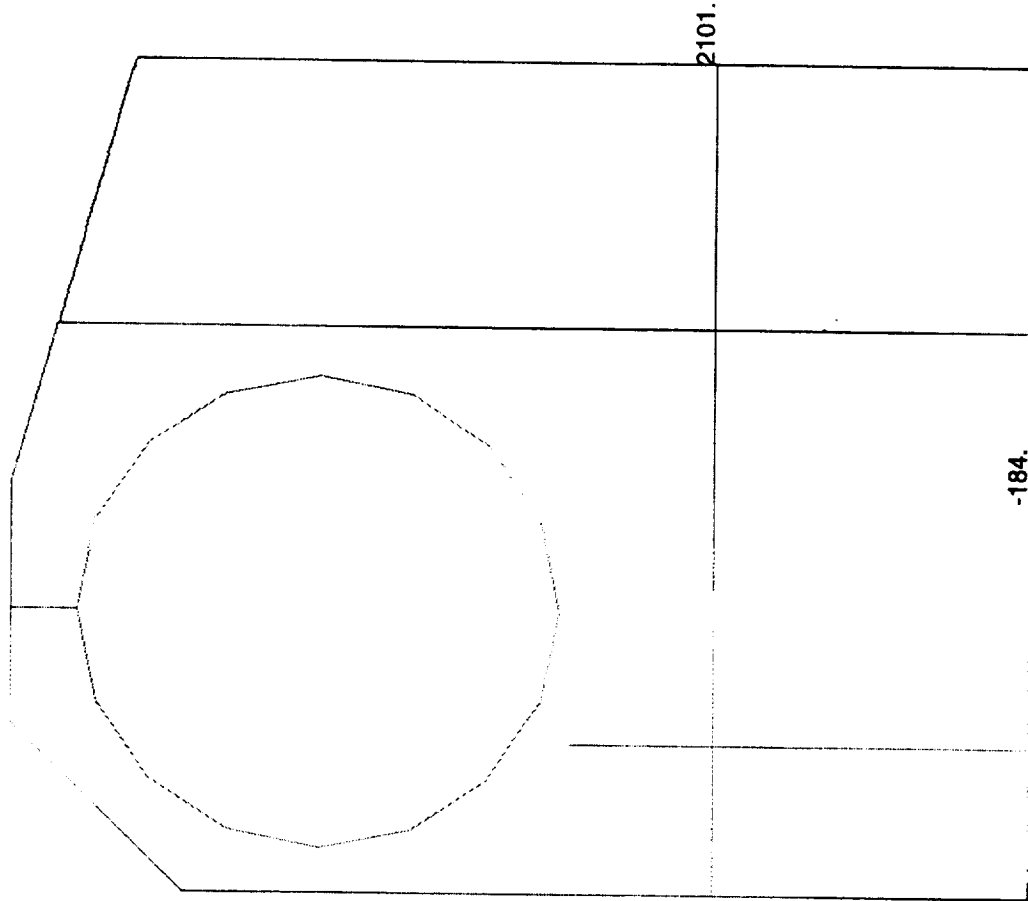
Von Mises
At 22

Design_Gy=-20.6_Oz=19.6
Static Subcase



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:59:49

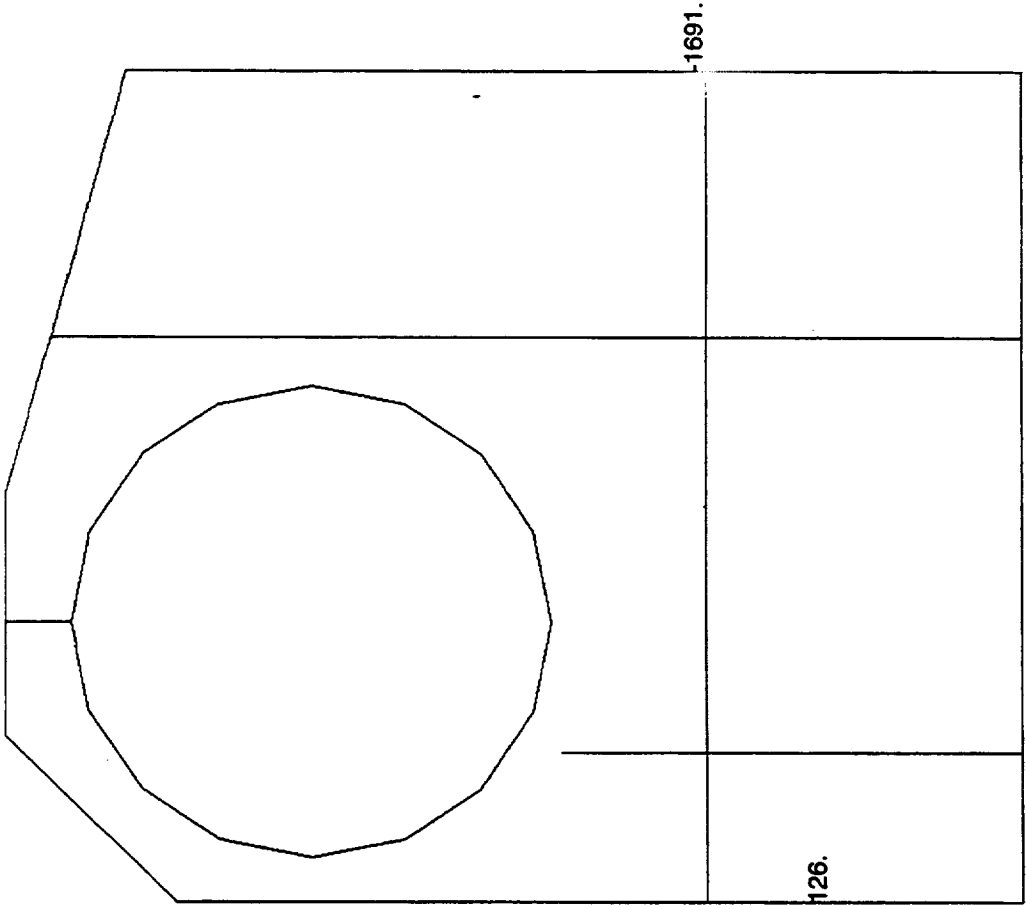
Upper Motor Mount Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

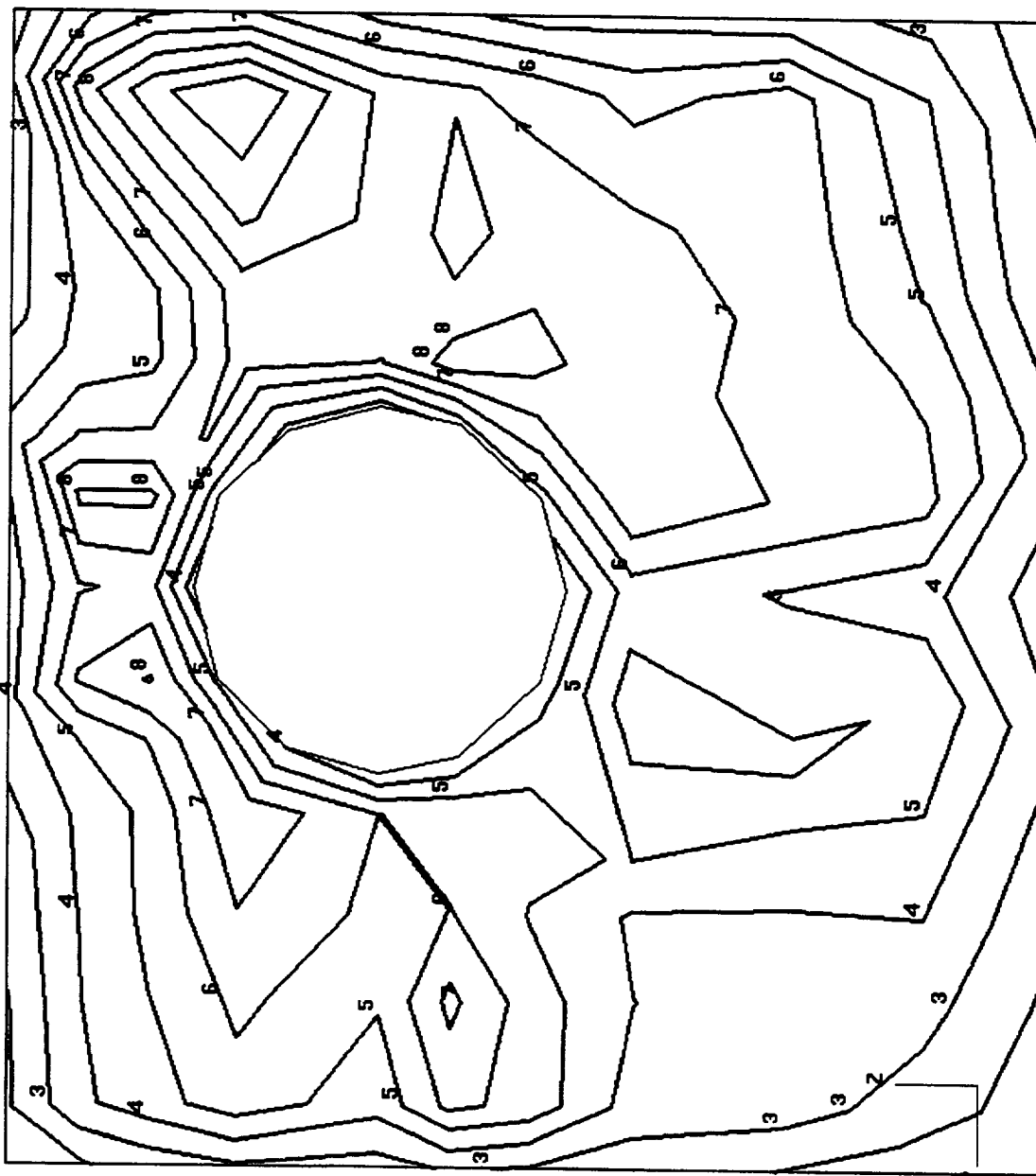
FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:59:55

Upper Motor Mount Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

Metsat AMSU-A1 Lower Front Panel



Time: 14:59:07
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.246E+04
1	0.221E+04
2	0.195E+04
3	0.170E+04
4	0.144E+04
5	0.118E+04
6	0.920E+03
7	0.672E+03
8	0.415E+03
9	0.159E+03

Min = 1.592898E+02

Max = 2.721124E+03

Min ID= 1191

Max ID= 1888

Contour_5:

Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0z=19.6
Static Subcase

Time: 14:58:36
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.238E+04
9	0.213E+04
8	0.188E+04
7	0.163E+04
6	0.138E+04
5	0.113E+04
4	0.886E+03
3	0.637E+03
2	0.388E+03
1	0.139E+03

Min = 1.393672E+02
Max = 2.628161E+03

Min ID= 1191

Max ID= 1888

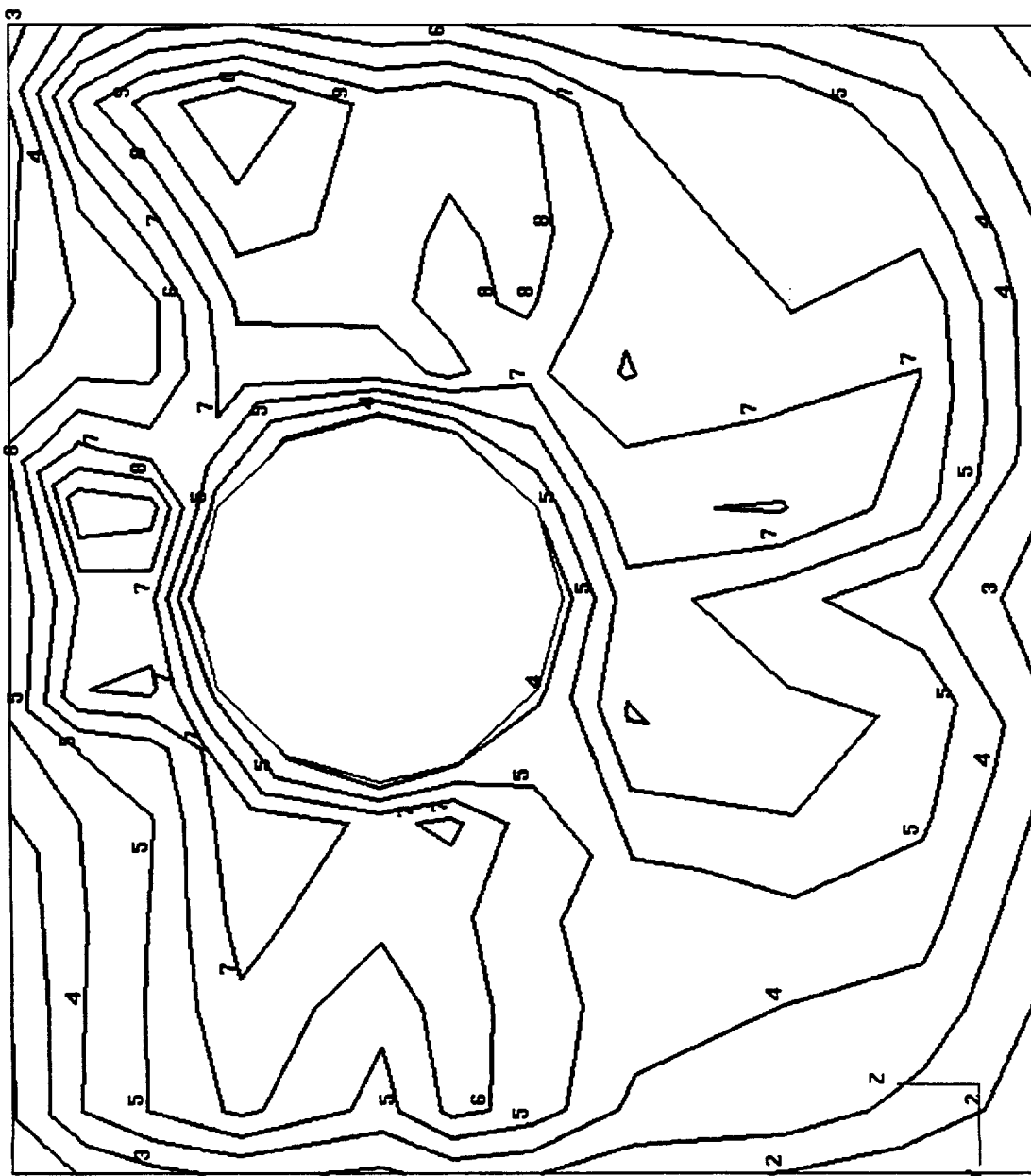
Contour_6:

Stress Tensor

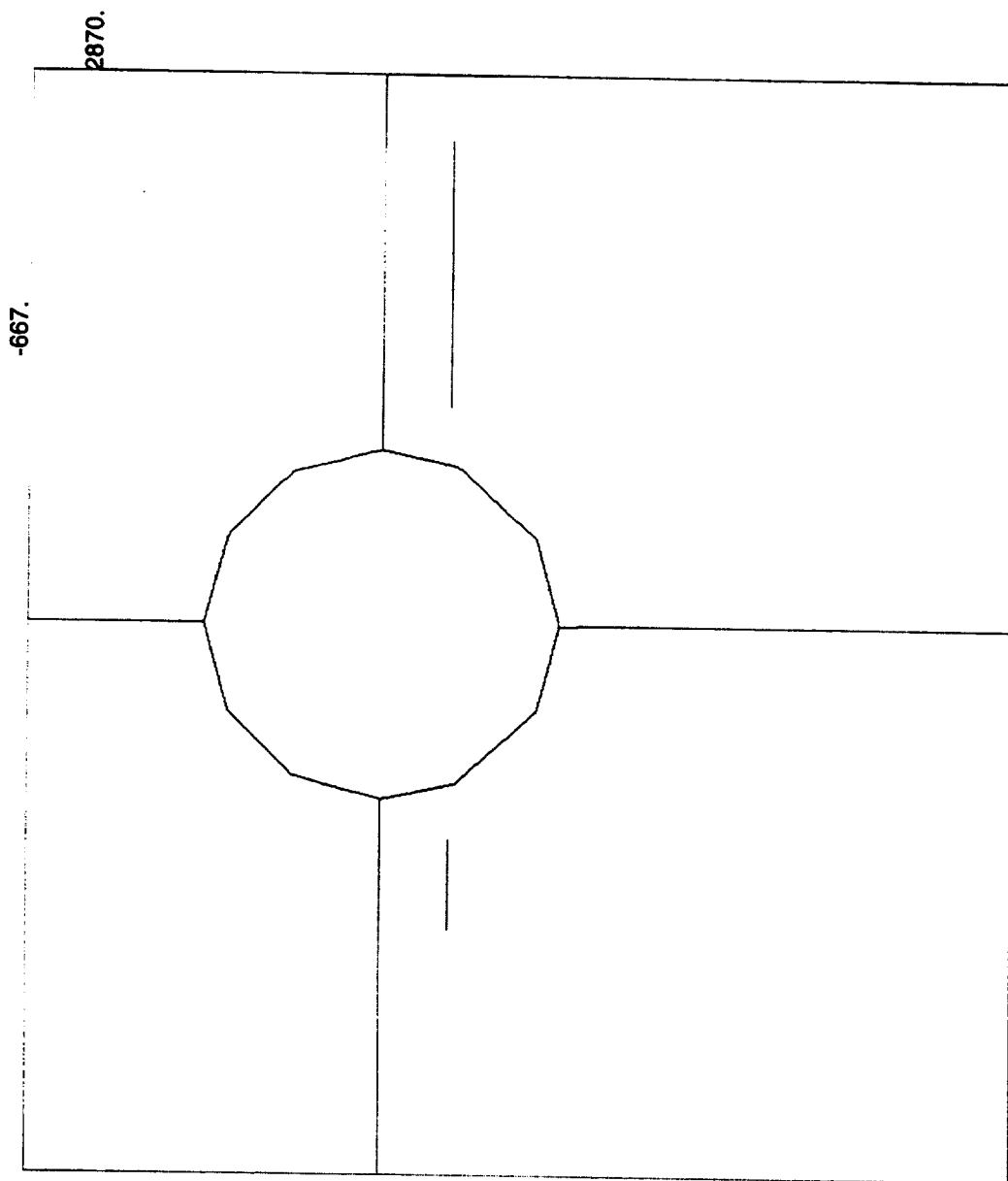
Von Mises
At 22

Design_Oy=-20.6_Oz=19.6
Static Subcase

Metsat AMSU-A1 Lower Front Panel

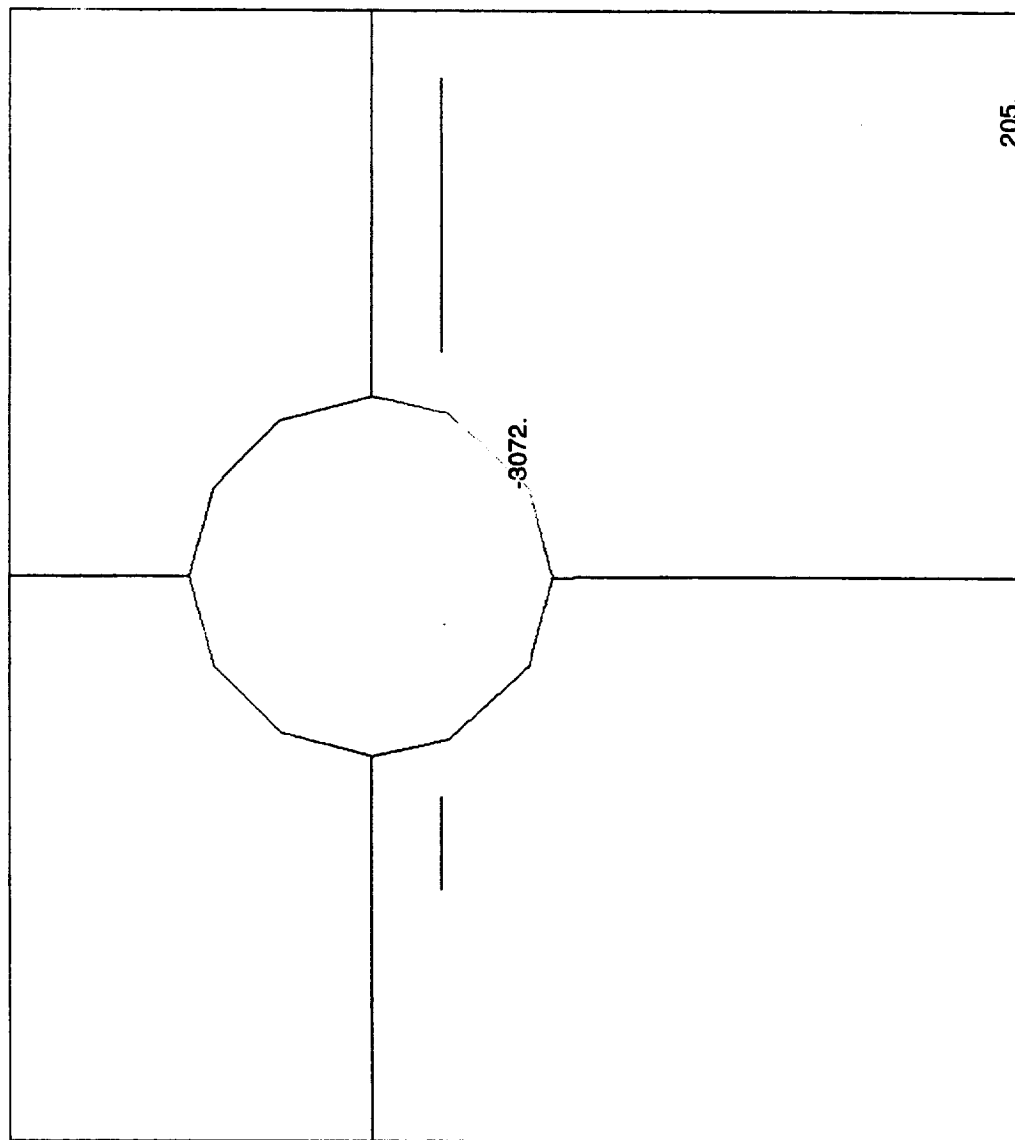


FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:27:49
Lower Front Panel Beams



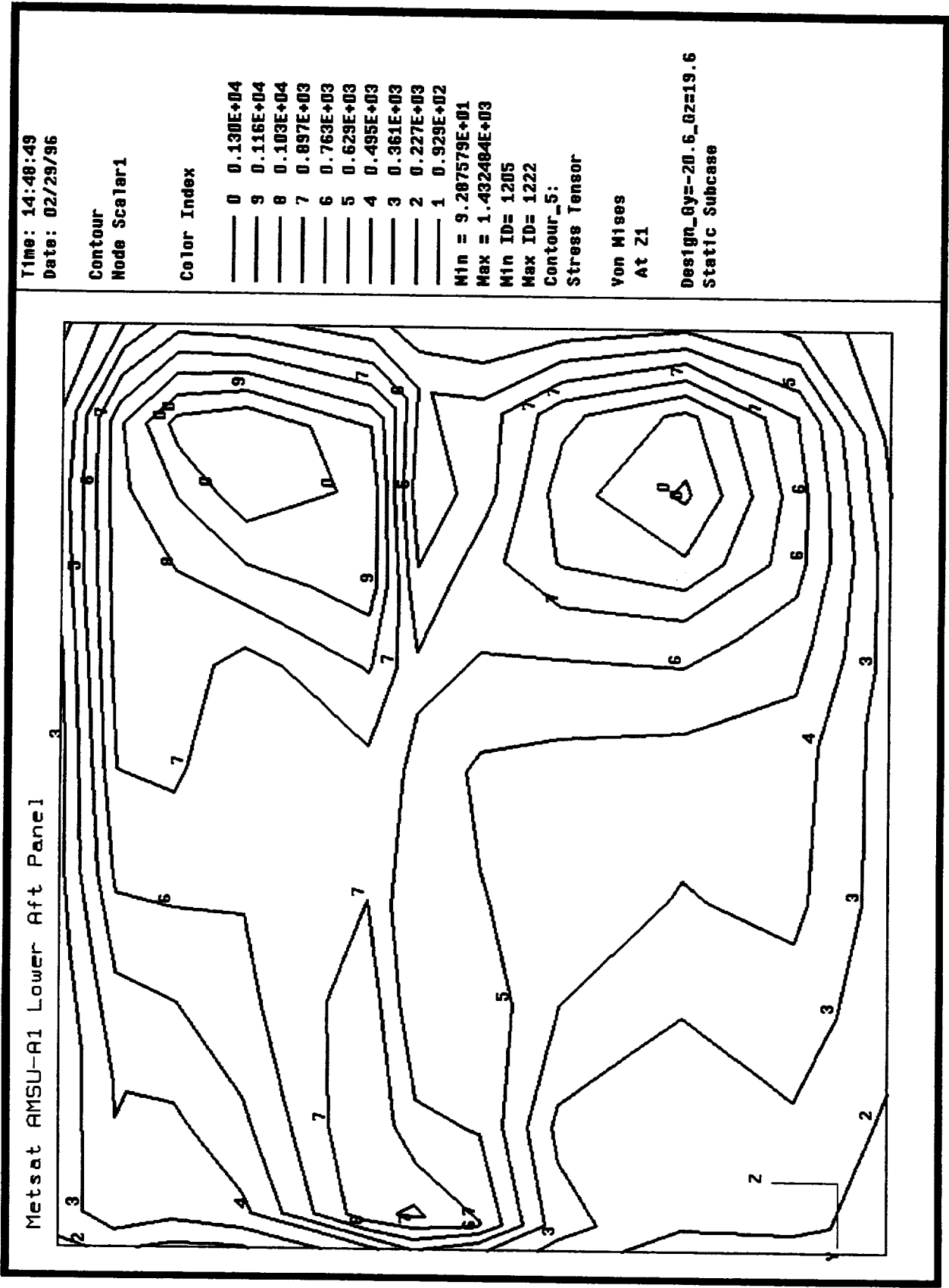
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:28:01
Lower Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

205.
-13.
-232.
-450.
-669.
-887.
-1106.
-1324.
-1543.
-1761.
-1979.
-2198.
-2416.
-2635.
-2853.
-3072.



Time: 14:49:21
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.143E+04
—	9	0.128E+04
—	8	0.112E+04
—	7	0.966E+03
—	6	0.811E+03
—	5	0.656E+03
—	4	0.500E+03
—	3	0.345E+03
—	2	0.189E+03
—	1	0.338E+02

Min = 3.381760E+01

Max = 1.588123E+03

Min ID= 1205

Max ID= 1231

Contour_6:

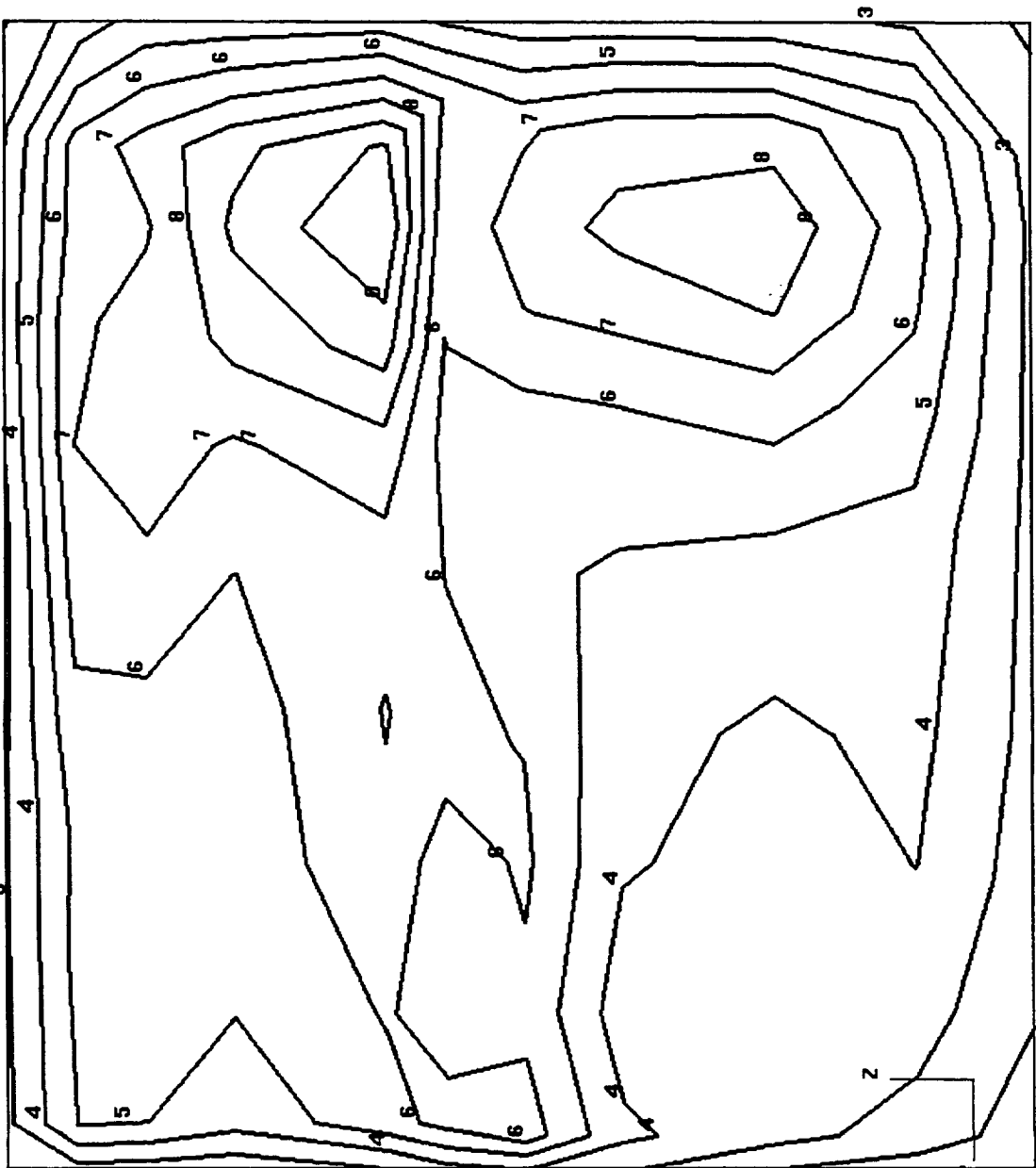
Stress Tensor

Von Mises

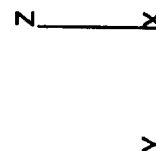
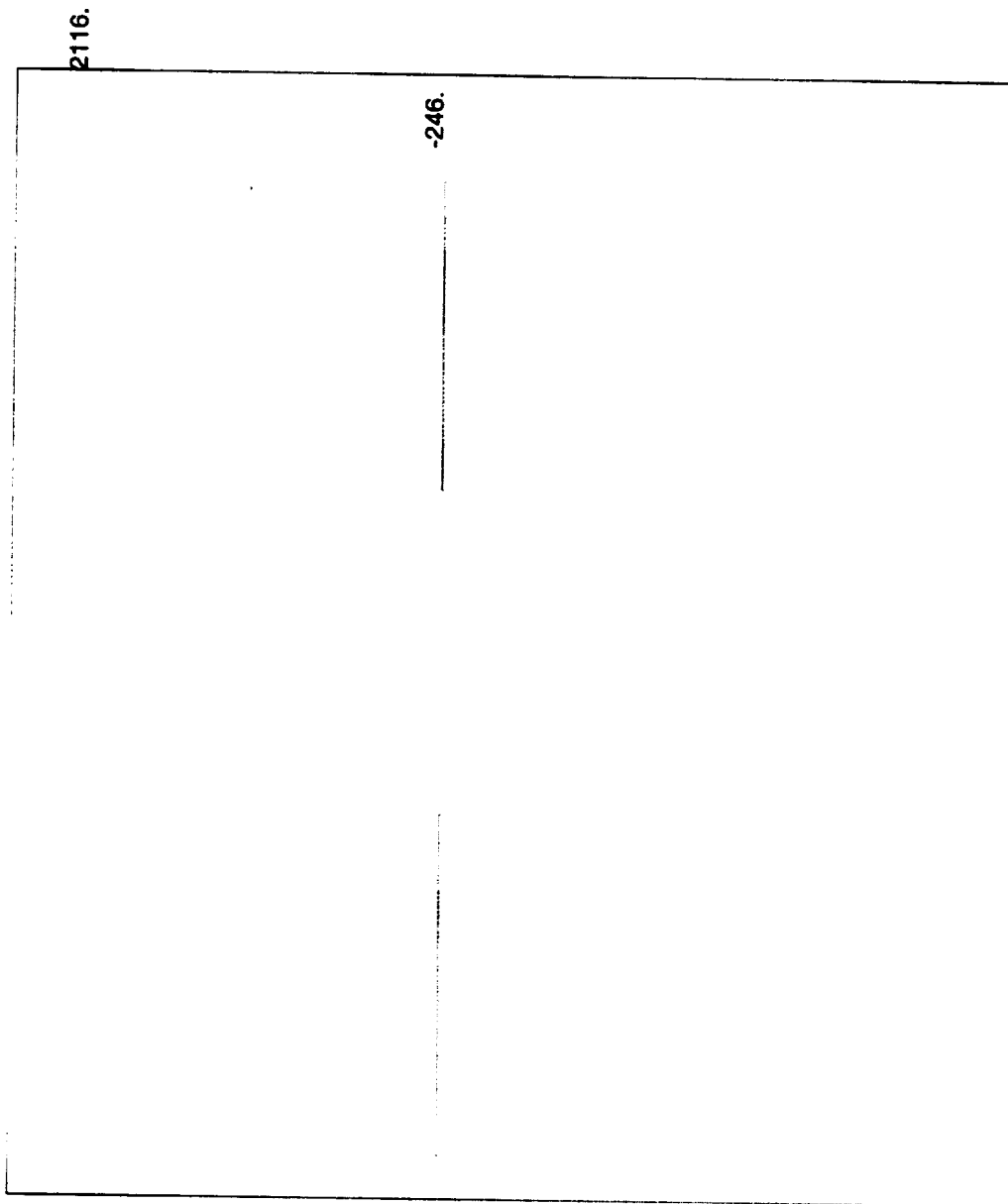
At 22

Design_Qy=-20.6_Qz=19.6
Static Subcase

Metsat AMSU-A1 Lower Aft Panel



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:21:53
Lower Aft Panel Beams

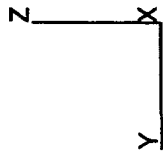
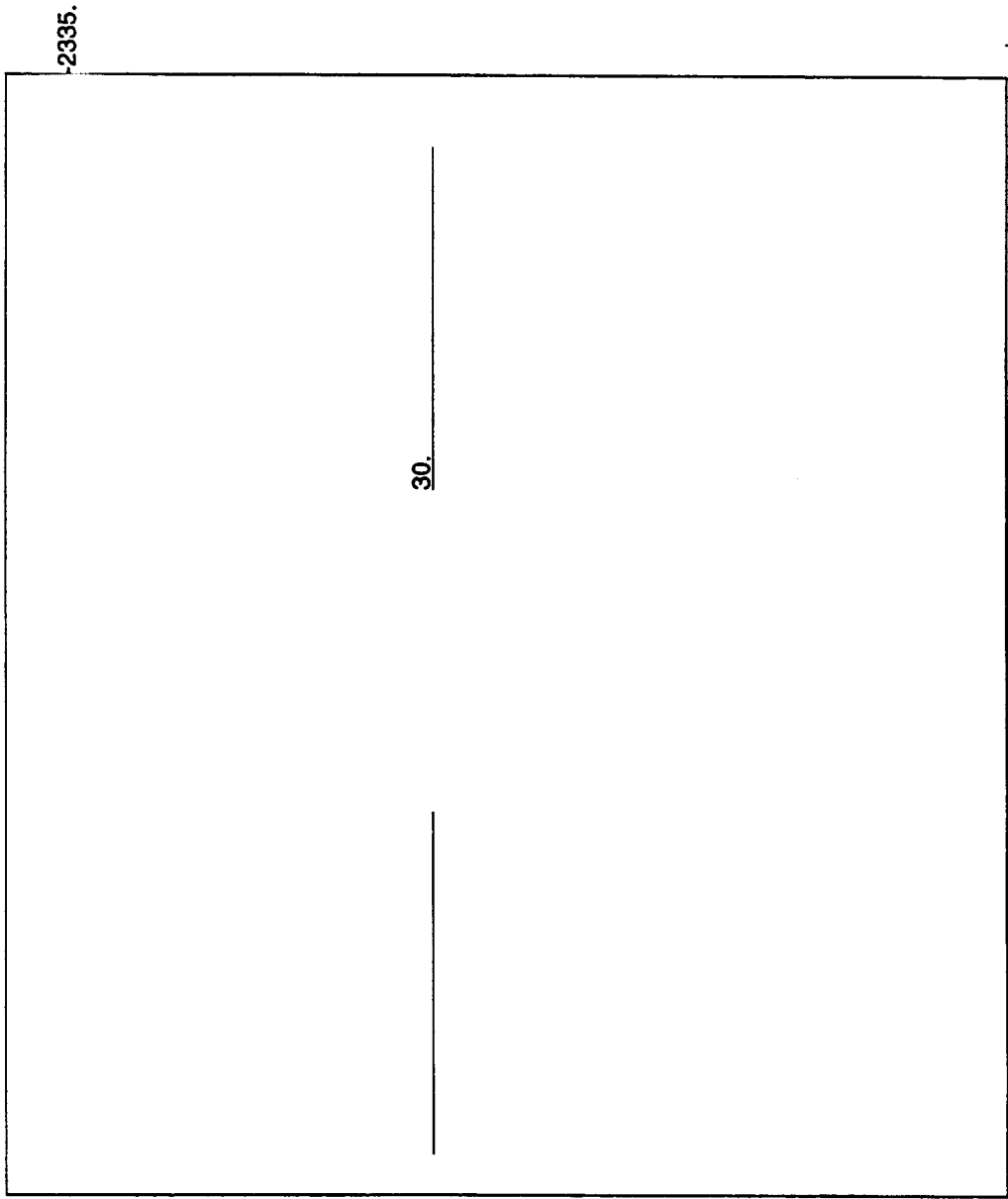


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

2116.
1959.
1801.
1644.
1486.
1329.
1171.
1014.
856.
699.
541.
384.
227.
69.
-88.
-246.

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:22:04

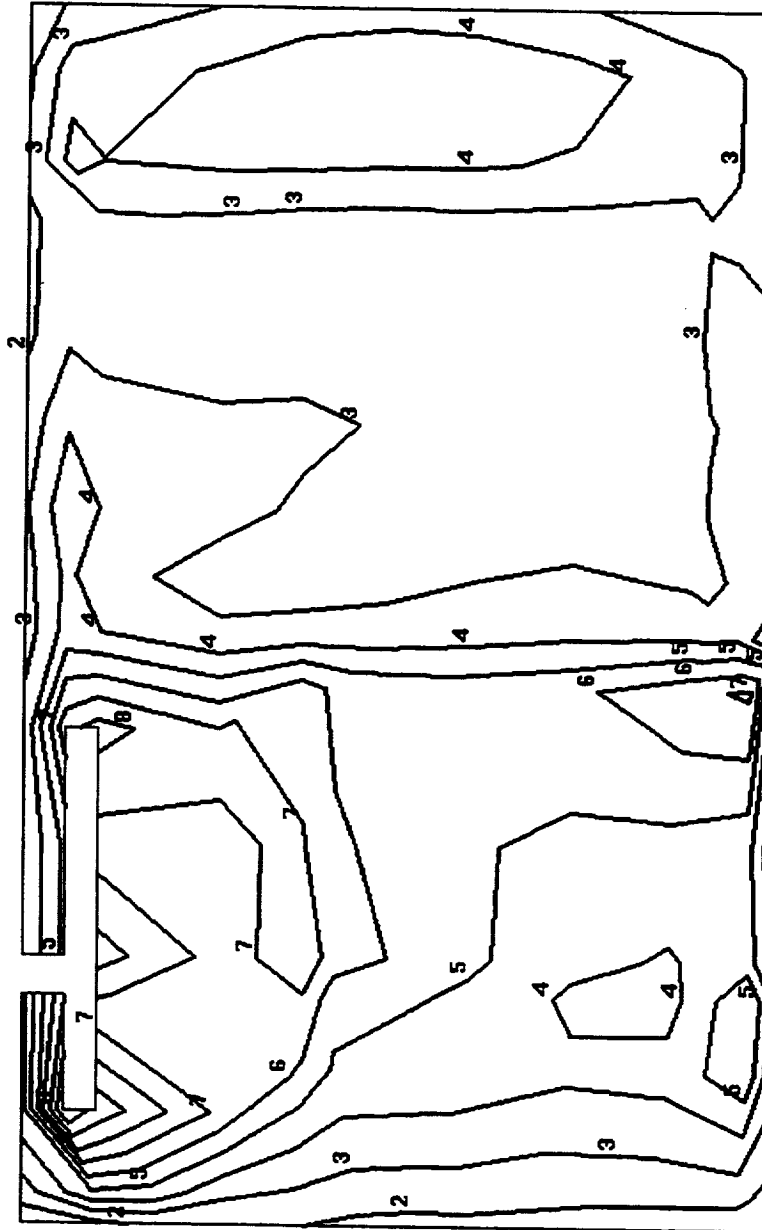
Lower Aft Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

30.
-128.
-285.
-443.
-601.
-758.
-916.
-1074.
-1231.
-1389.
-1547.
-1704.
-1862.
-2020.
-2177.
-2335.

Metsat AMSU-A1
Upper Baseplate



Time: 16:03:32
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.177E+04
1	0.157E+04
2	0.138E+04
3	0.118E+04
4	0.989E+03
5	0.794E+03
6	0.599E+03
7	0.404E+03
8	0.209E+03
9	0.139E+02

Min = 1.394836E+01

Max = 1.964755E+03

Min ID= 1457

Max ID= 1477

Contour_5:

Stress Tensor

Von Mises

At Z1

Design_Oy=-20.6_0z=19.6
Static Subcase

Time: 16:11:08
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.152E+04
—	9	0.135E+04
—	8	0.118E+04
—	7	0.101E+04
—	6	0.844E+03
—	5	0.676E+03
—	4	0.508E+03
—	3	0.340E+03
—	2	0.172E+03
—	1	0.348E+01

M1n = 3.475421E+00

Max = 1.684887E+03

M1n ID= 1458

Max ID= 1517

Contour_6:

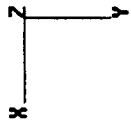
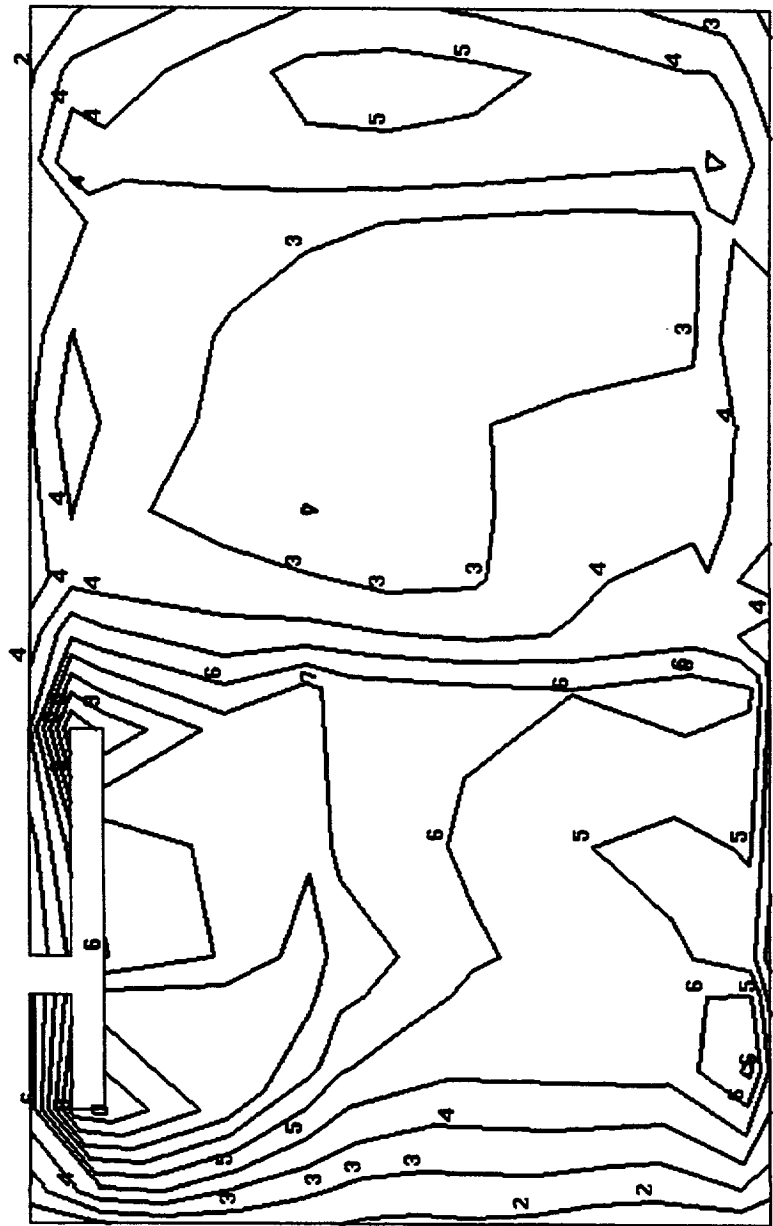
Stress Tensor

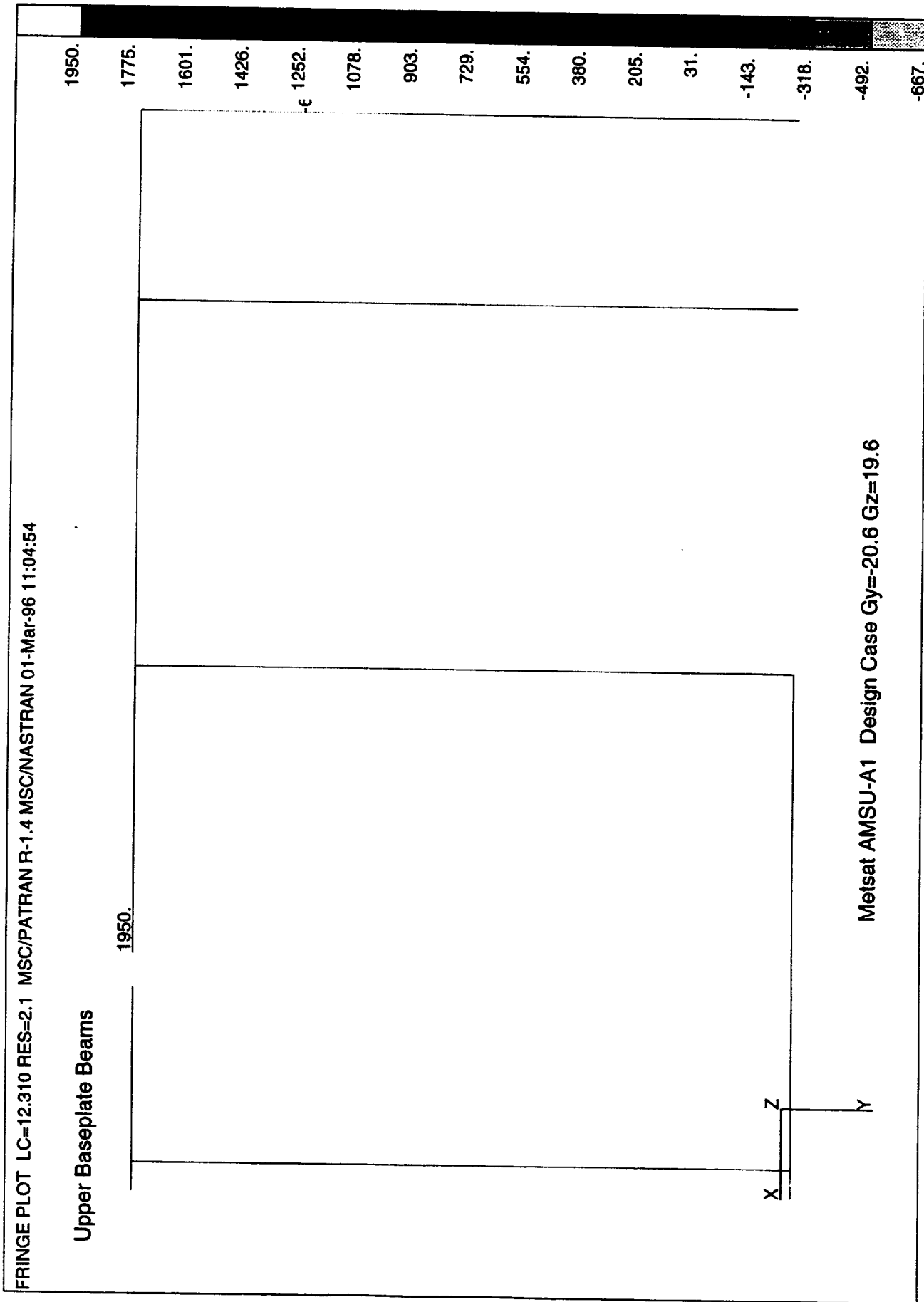
Von Mises

At 22

Design_0y=-20.6_0z=19.6
Static Subcase

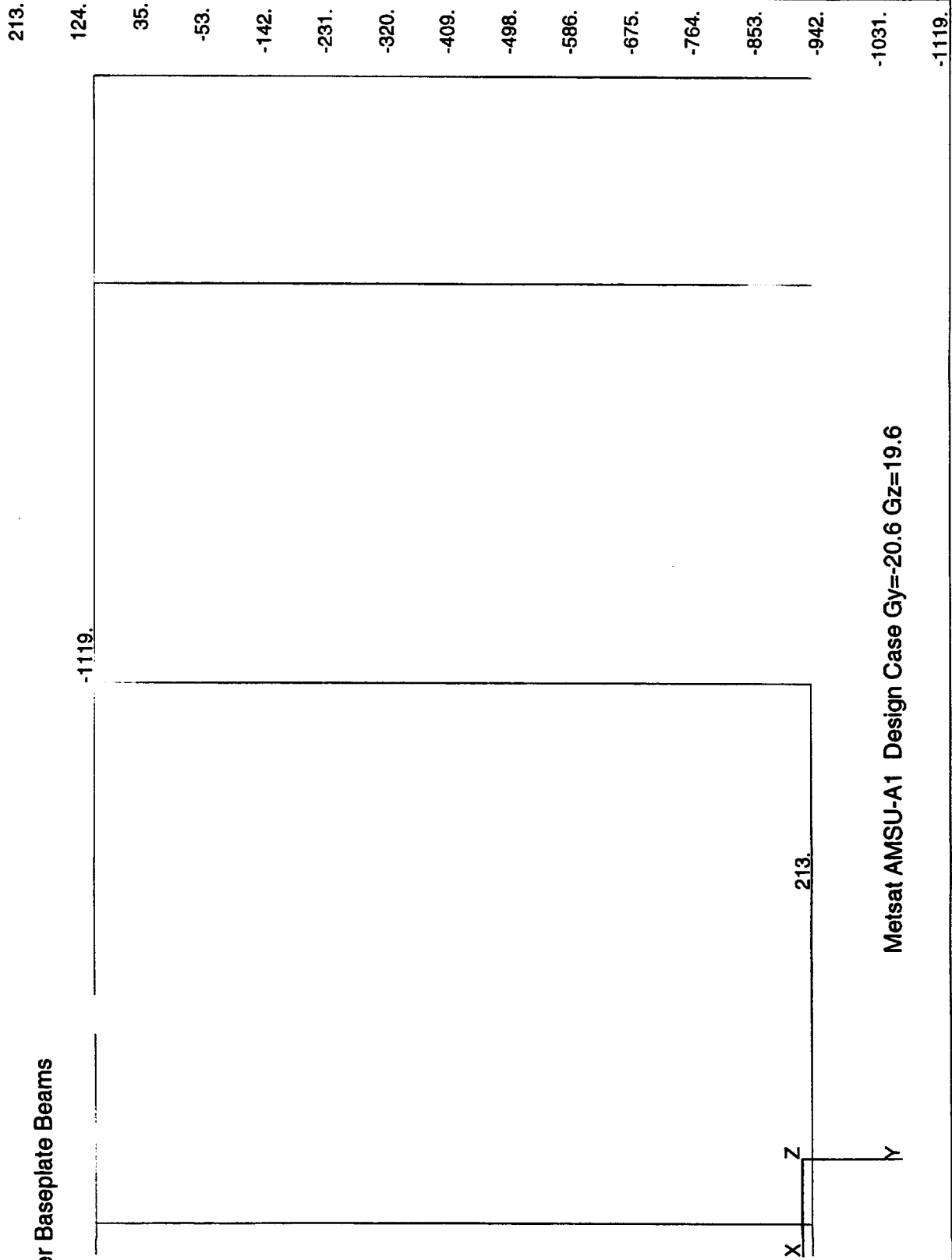
Metsat AMSU-A1
Upper Baseplate





FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:05:04

Upper Baseplate Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

Time: 15:34:42
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.120E+04
—	9	0.114E+04
—	8	0.100E+04
—	7	0.863E+03
—	6	0.723E+03
—	5	0.583E+03
—	4	0.444E+03
—	3	0.304E+03
—	2	0.165E+03
—	1	0.250E+02

Min = 2.501580E+01

Max = 1.421001E+03

Min ID= 1993

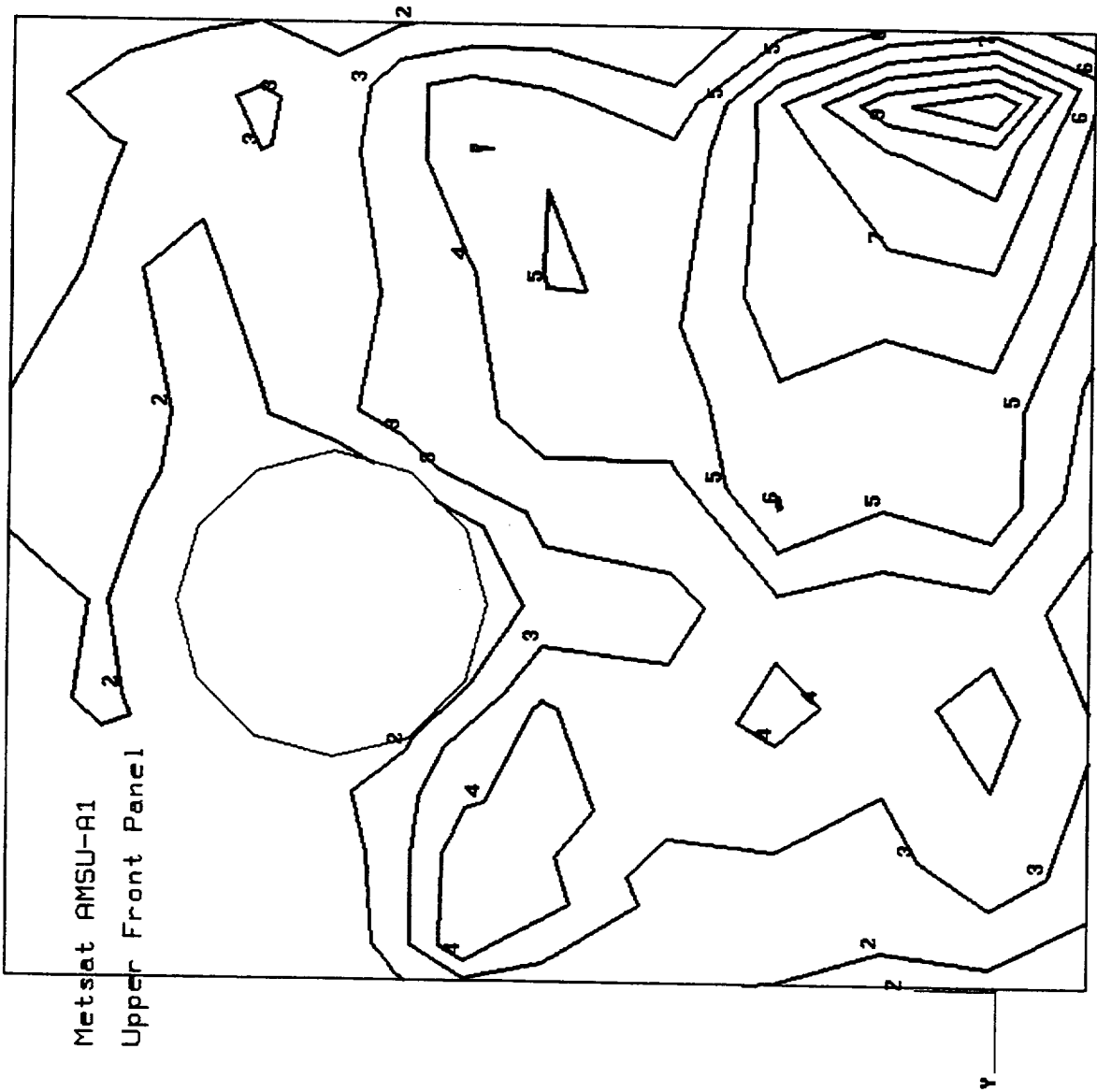
Max ID= 2101

Contour_5:

Stress Tensor

Von Mises
At Z1

Design_Oy=-20.6_Gz=19.6
Static Subcase



Time: 15:35:36
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.153E+04
1	0.136E+04
2	0.119E+04
3	0.103E+04
4	0.859E+03
5	0.691E+03
6	0.523E+03
7	0.355E+03
8	0.188E+03
9	0.198E+02

Min = 1.976725E+01

Max = 1.697272E+03

Min ID= 1989

Max ID= 2101

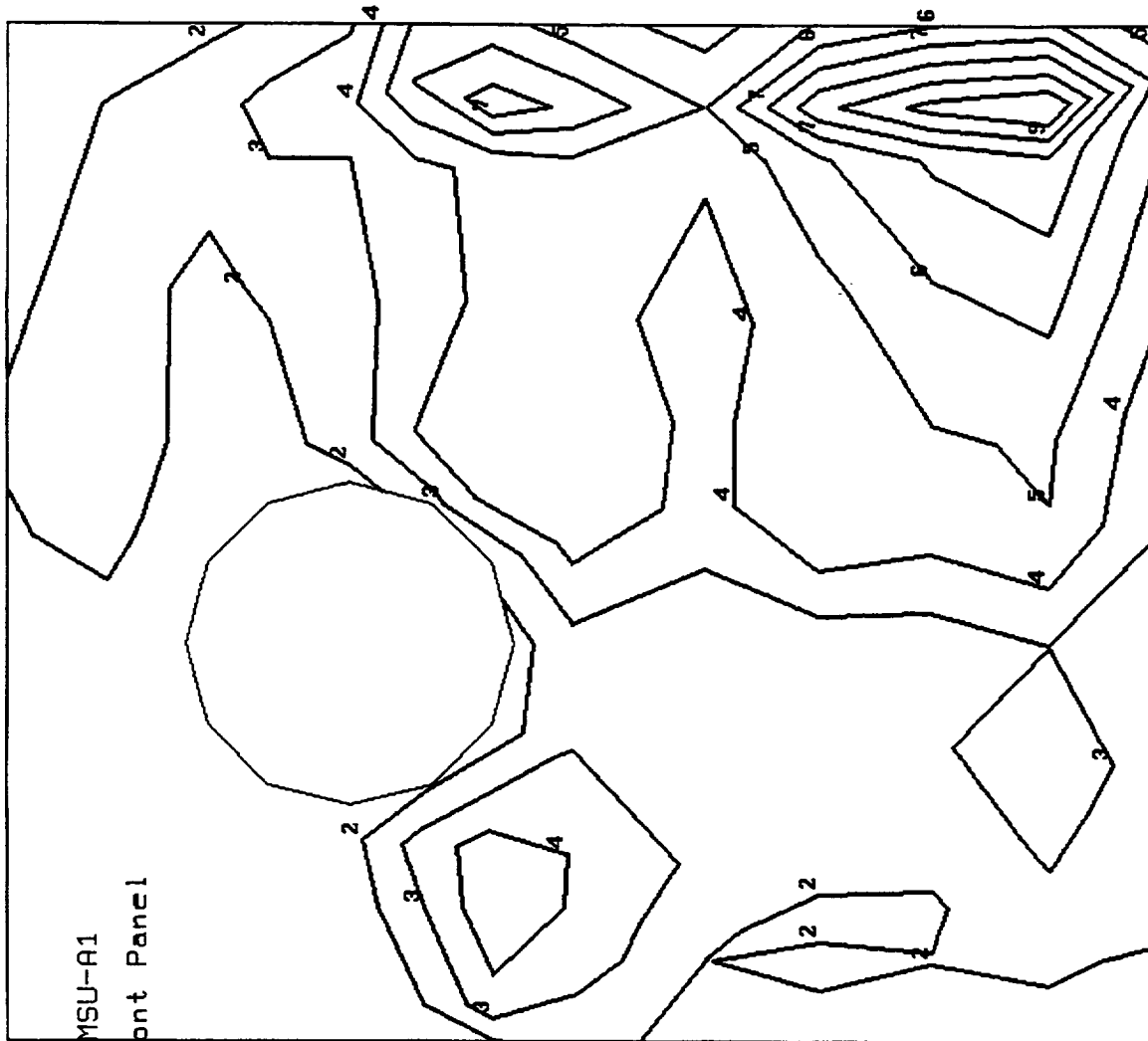
Contour_6:

Stress Tensor

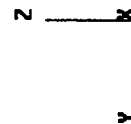
von Mises

At 22

Design_0ys=-20.6_0z=19.6
Static Subcase

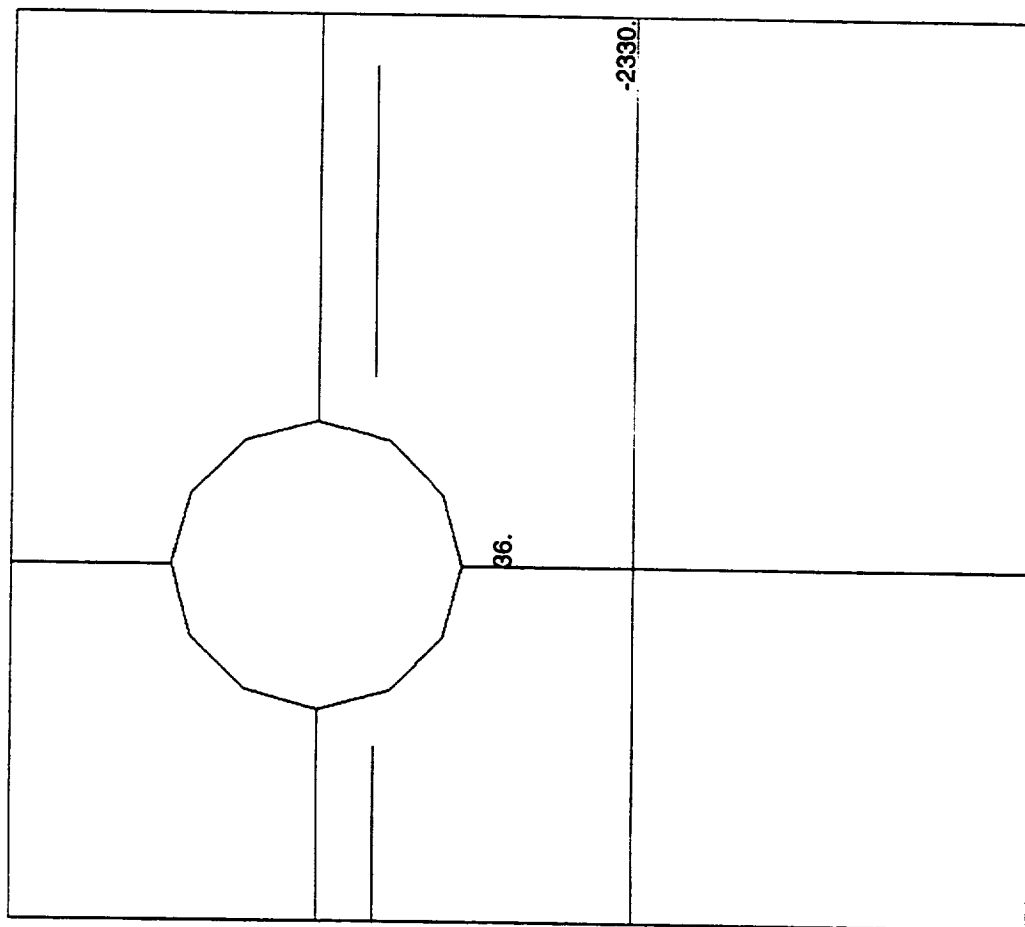


Metsat AMSU-A1
Upper Front Panel



FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:55:22

Upper Front Panel Beams

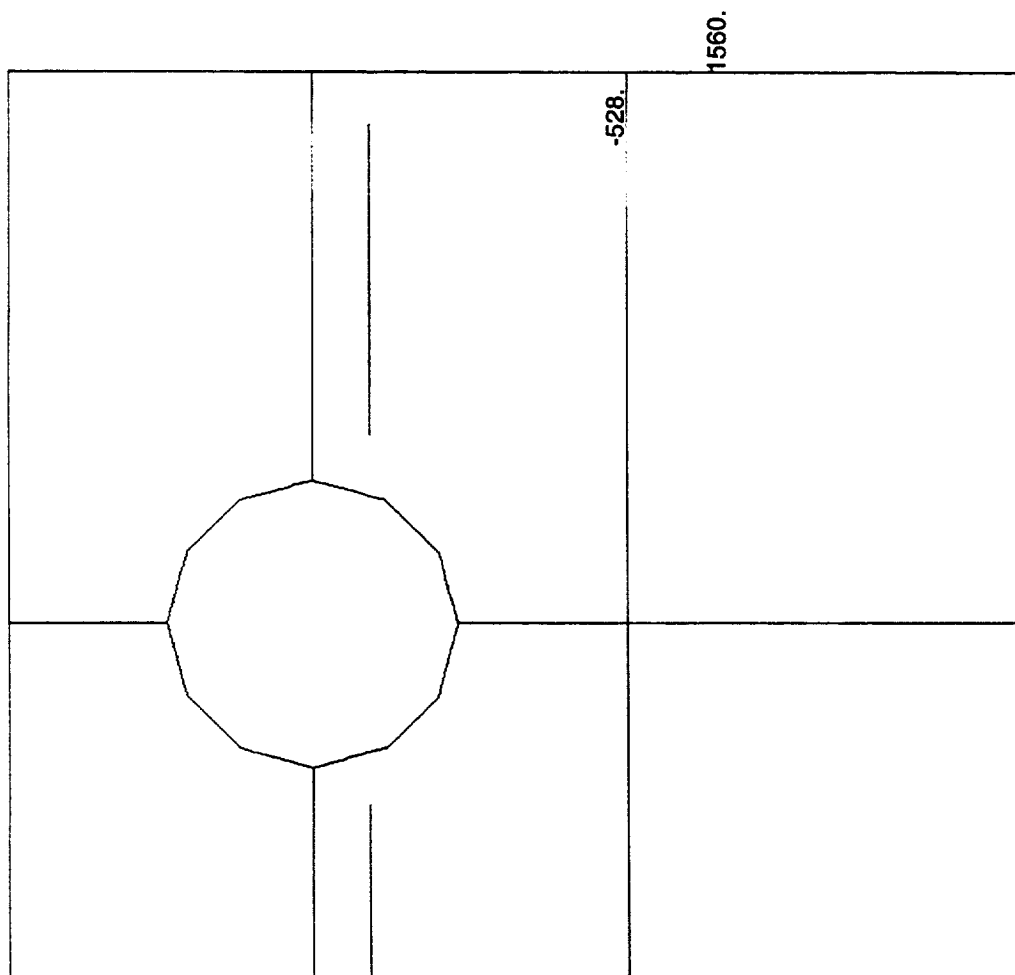


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

36.
-122.
-279.
-437.
-595.
-753.
-910.
-1068.
-1226.
-1383.
-1541.
-1699.
-1856.
-2014.
-2172.
-2330.

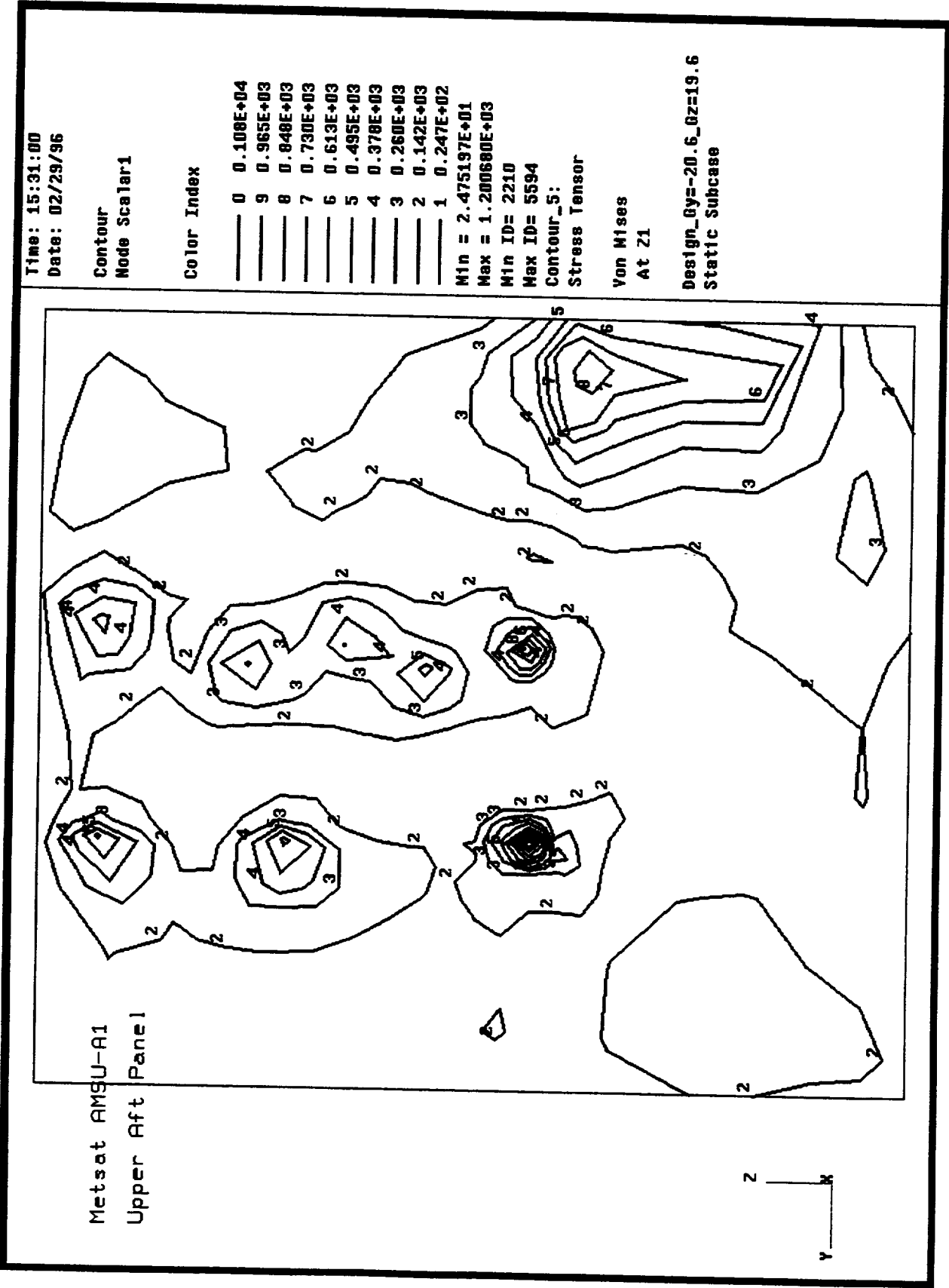
FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:55:17

Upper Front Panel Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

1560.
1421.
1282.
1143.
1003.
864.
725.
586.
447.
307.
168.
29.
-110.
-249.
-389.
-528.



Time: 15:29:49
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.100E+04
1	0.892E+03
2	0.783E+03
3	0.674E+03
4	0.565E+03
5	0.456E+03
6	0.347E+03
7	0.238E+03
8	0.128E+03
9	0.194E+02

Min = 1.936243E+01

Max = 1.110138E+03

Min ID= 2210

Max ID= 5594

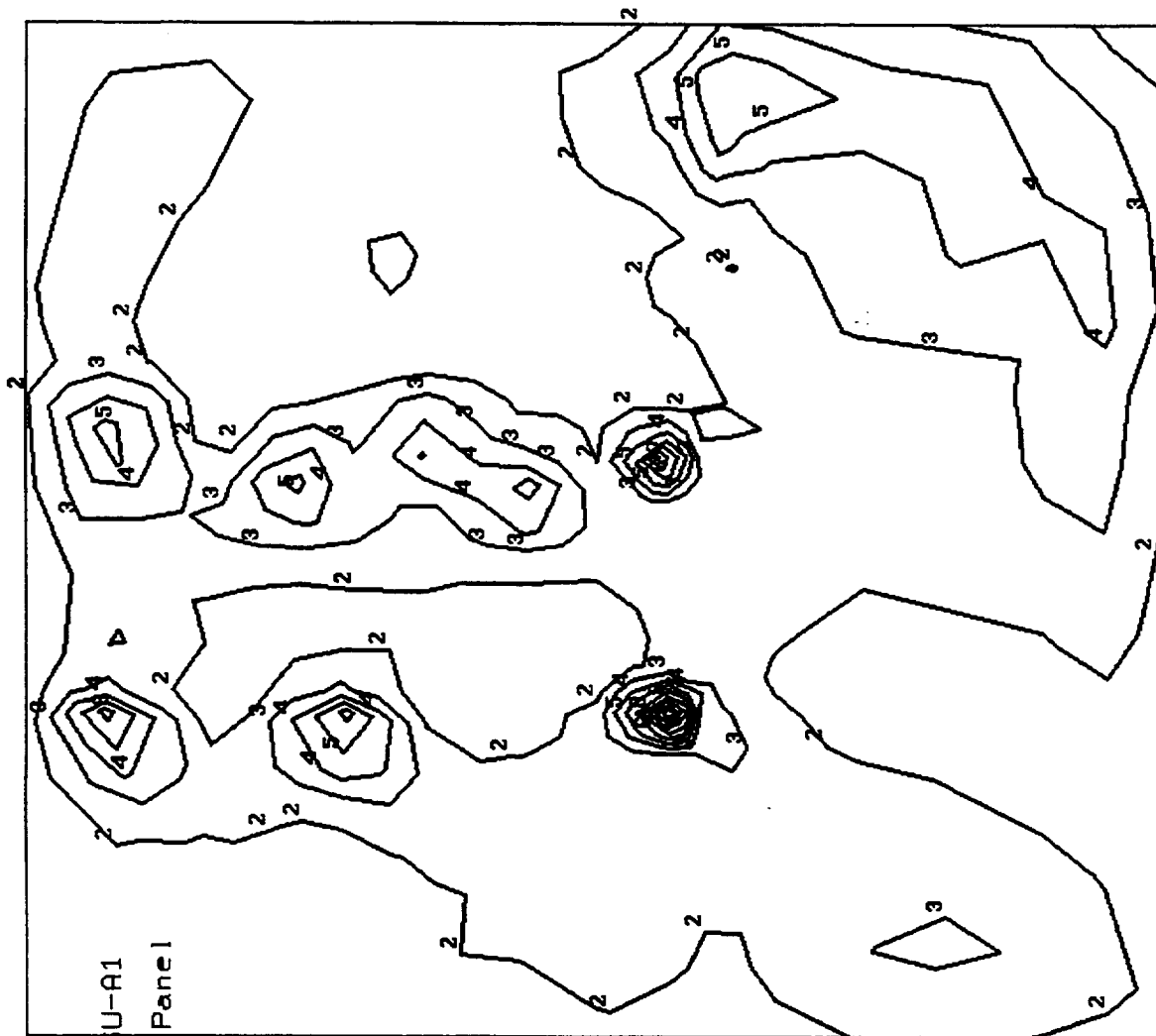
Contour_6:

Stress Tensor

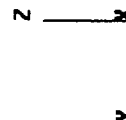
Von Mises

At 22

Design_Qy=-20.6_Qz=19.6
Static Subcase

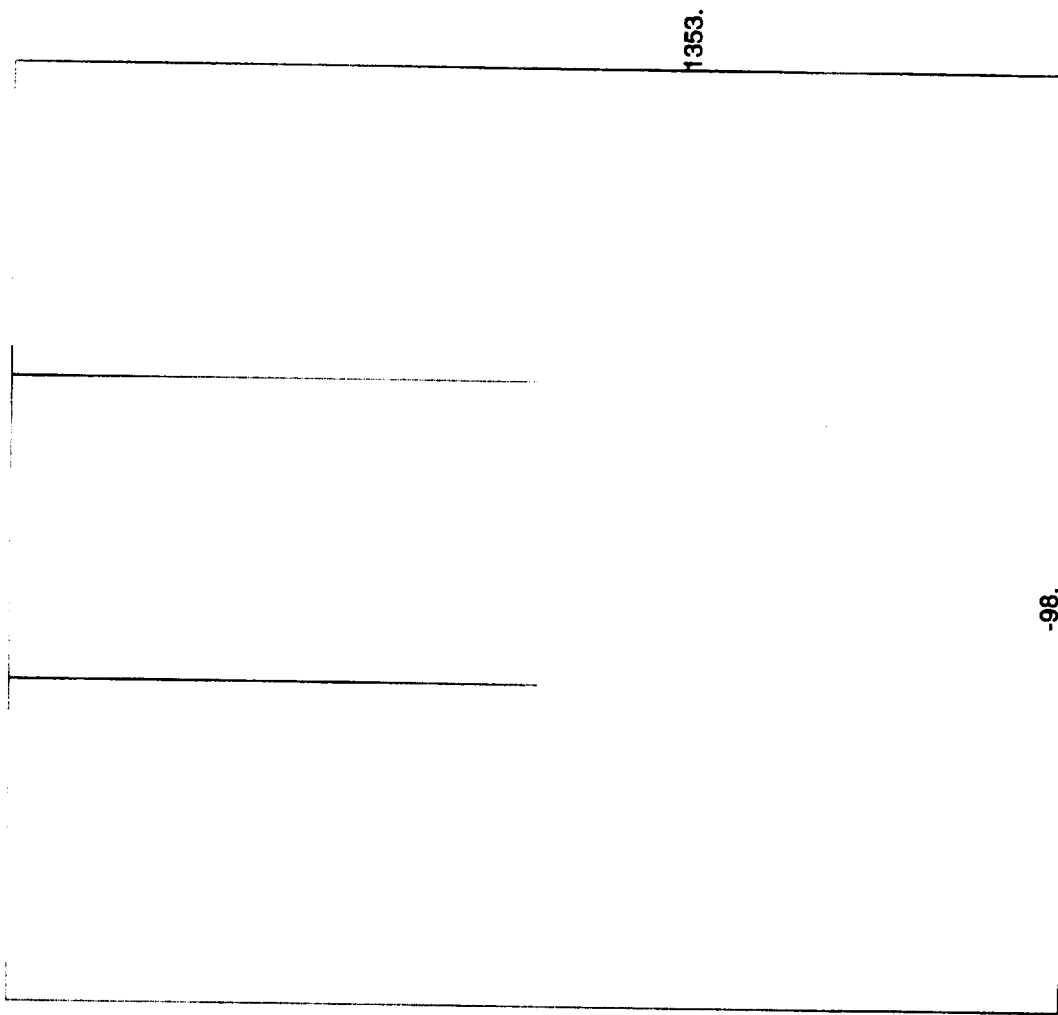


Metsat AMSU-A1
Upper Aft Panel

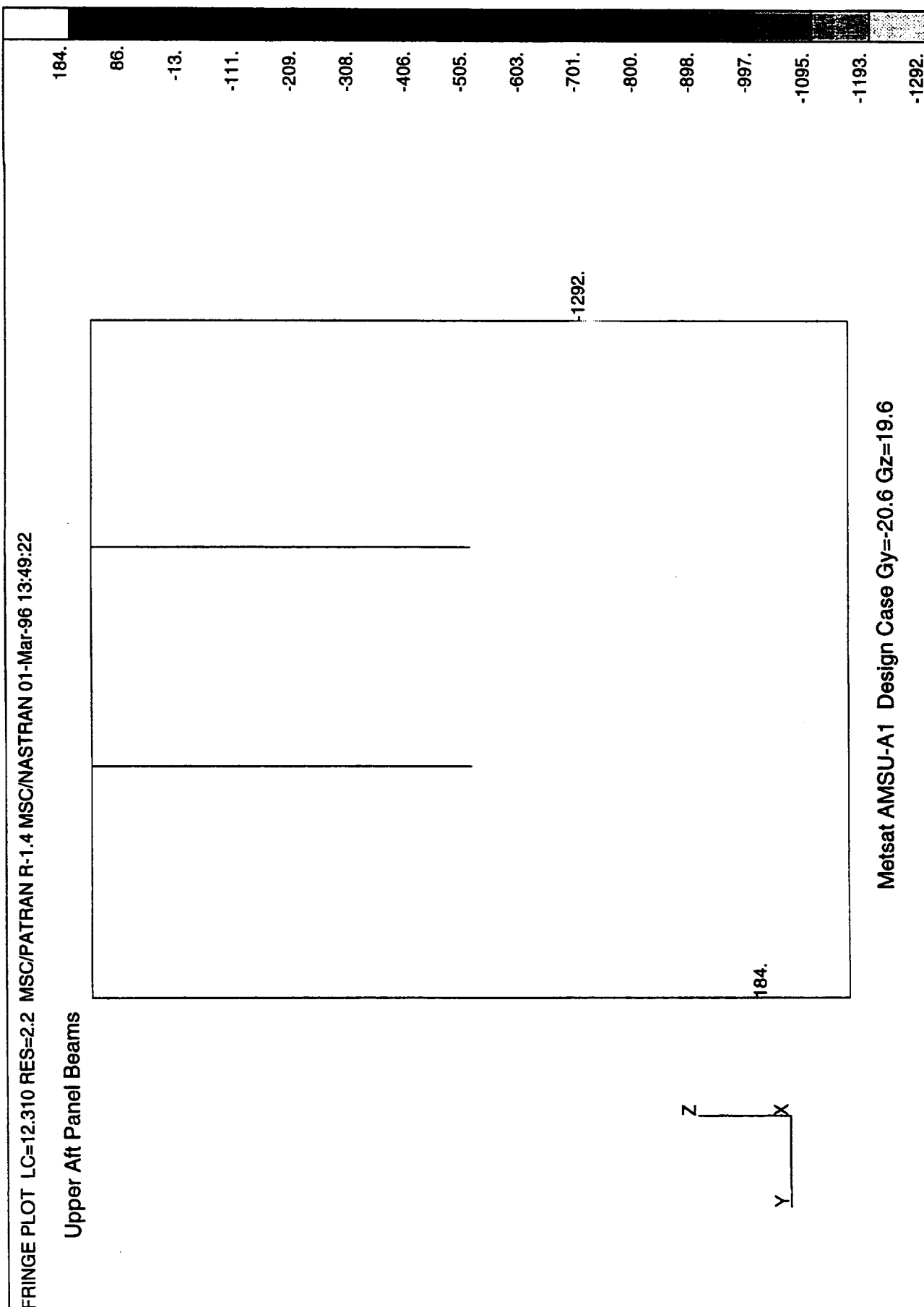


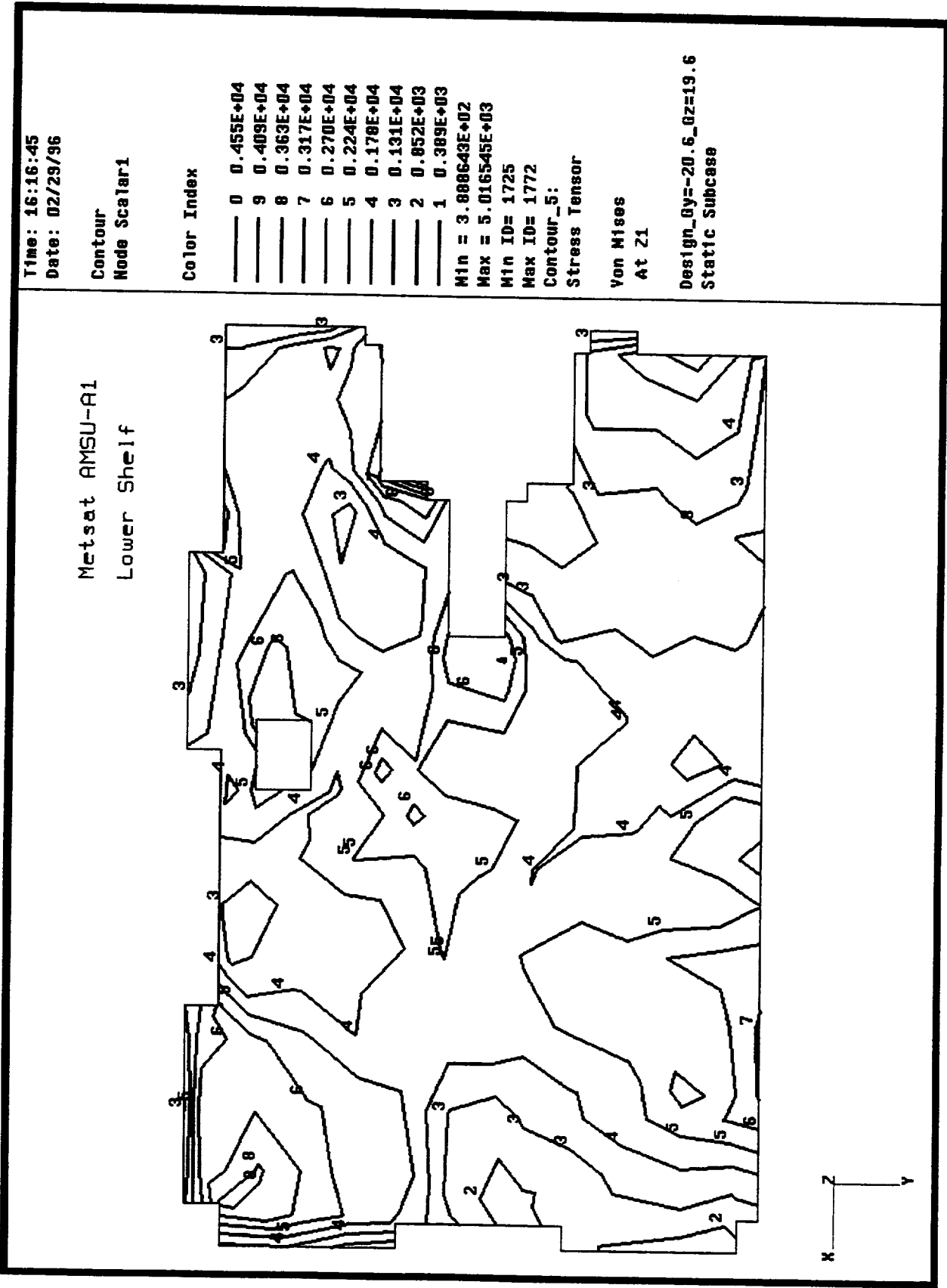
FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:49:13

Upper Aft Panel Beams



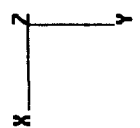
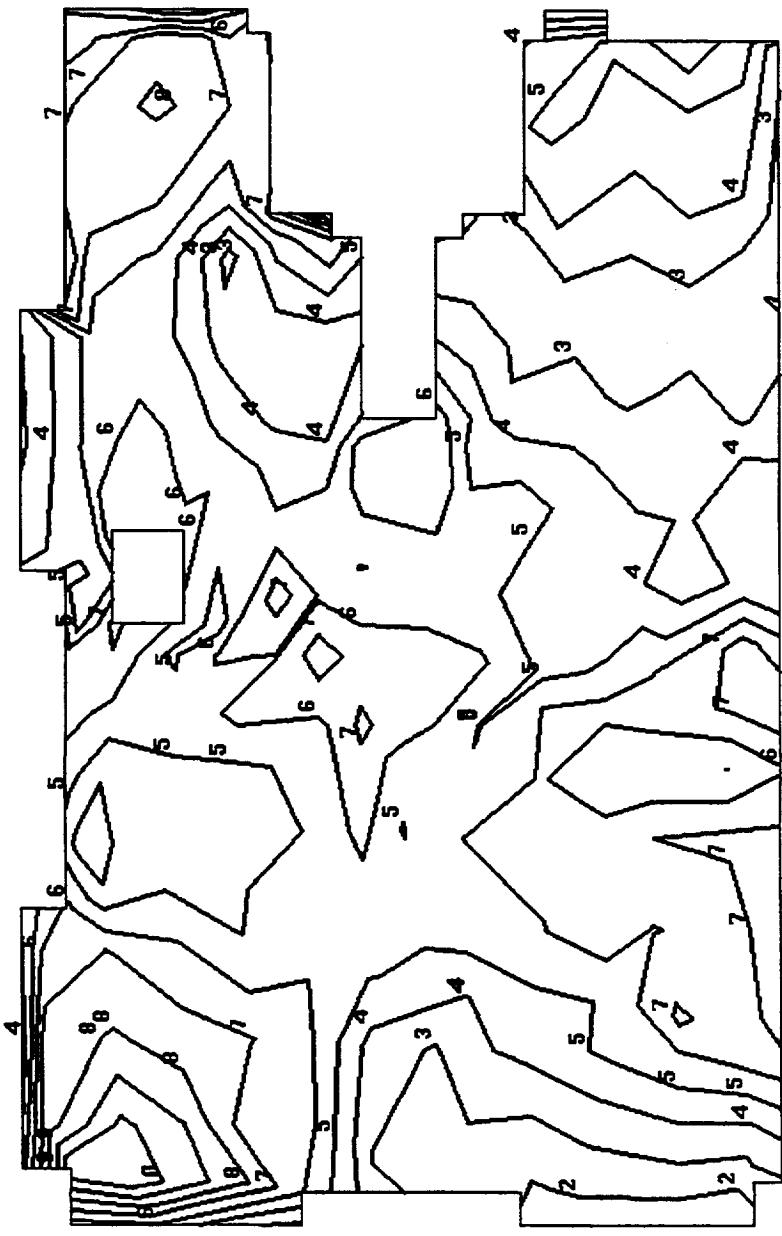
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6





Time: 16:16:24
Date: 02/29/96

Metsat AMSU-A1
Lower Shelf



Contour
Node Scalar1

Color Index

—	0	0.382E+04
—	9	0.343E+04
—	8	0.304E+04
—	7	0.265E+04
—	6	0.226E+04
—	5	0.188E+04
—	4	0.149E+04
—	3	0.110E+04
—	2	0.714E+03
—	1	0.326E+03

Min = 3.263510E+02

Max = 4.203338E+03

Min ID= 1290

Max ID= 1772

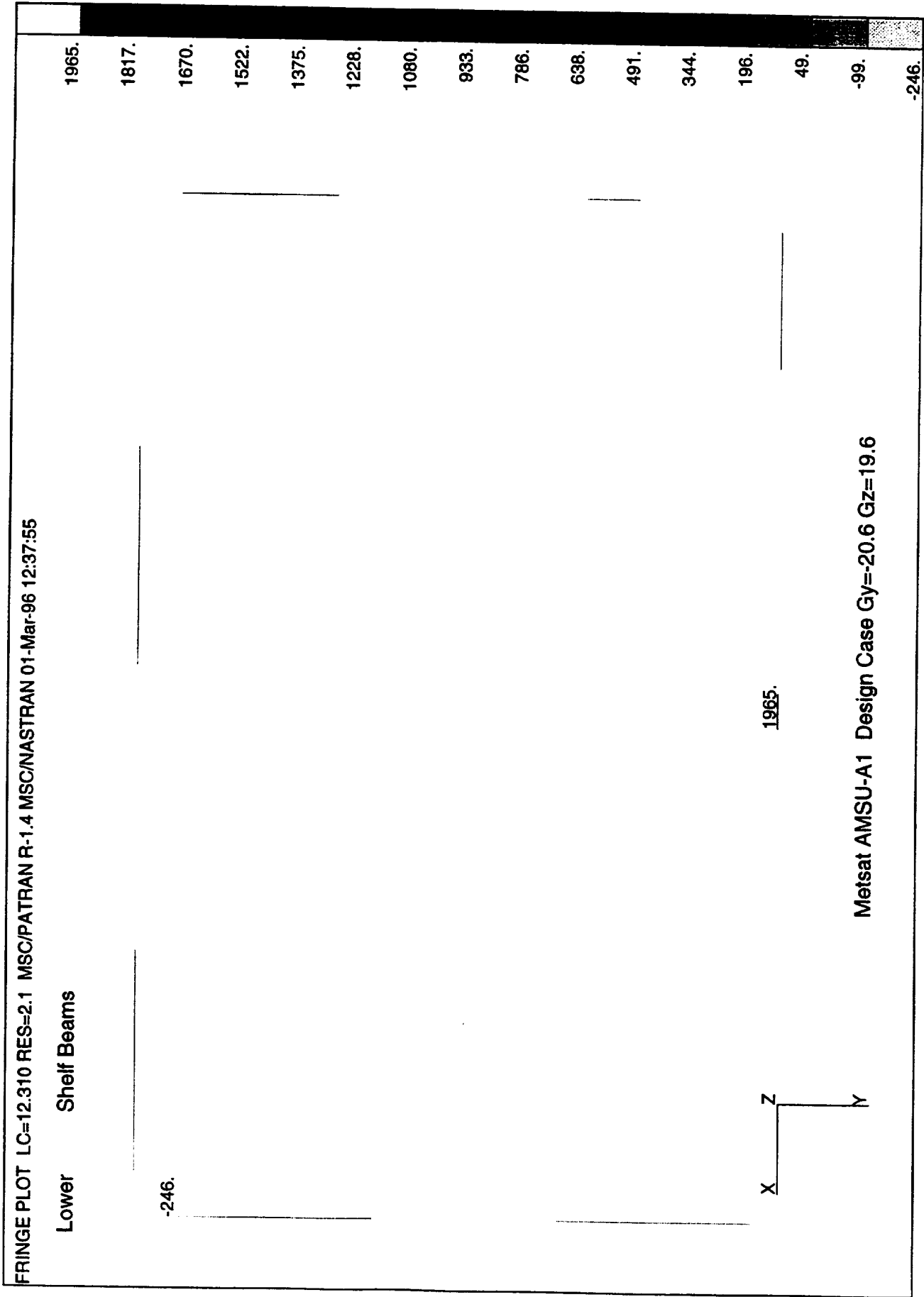
Contour_6:

Stress Tensor

Von Mises

At 22

Design_Oy=-20.6_Oz=19.6
Static Subcase



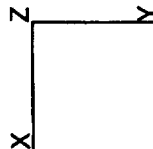
FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:37:47

Lower Shelf Beams

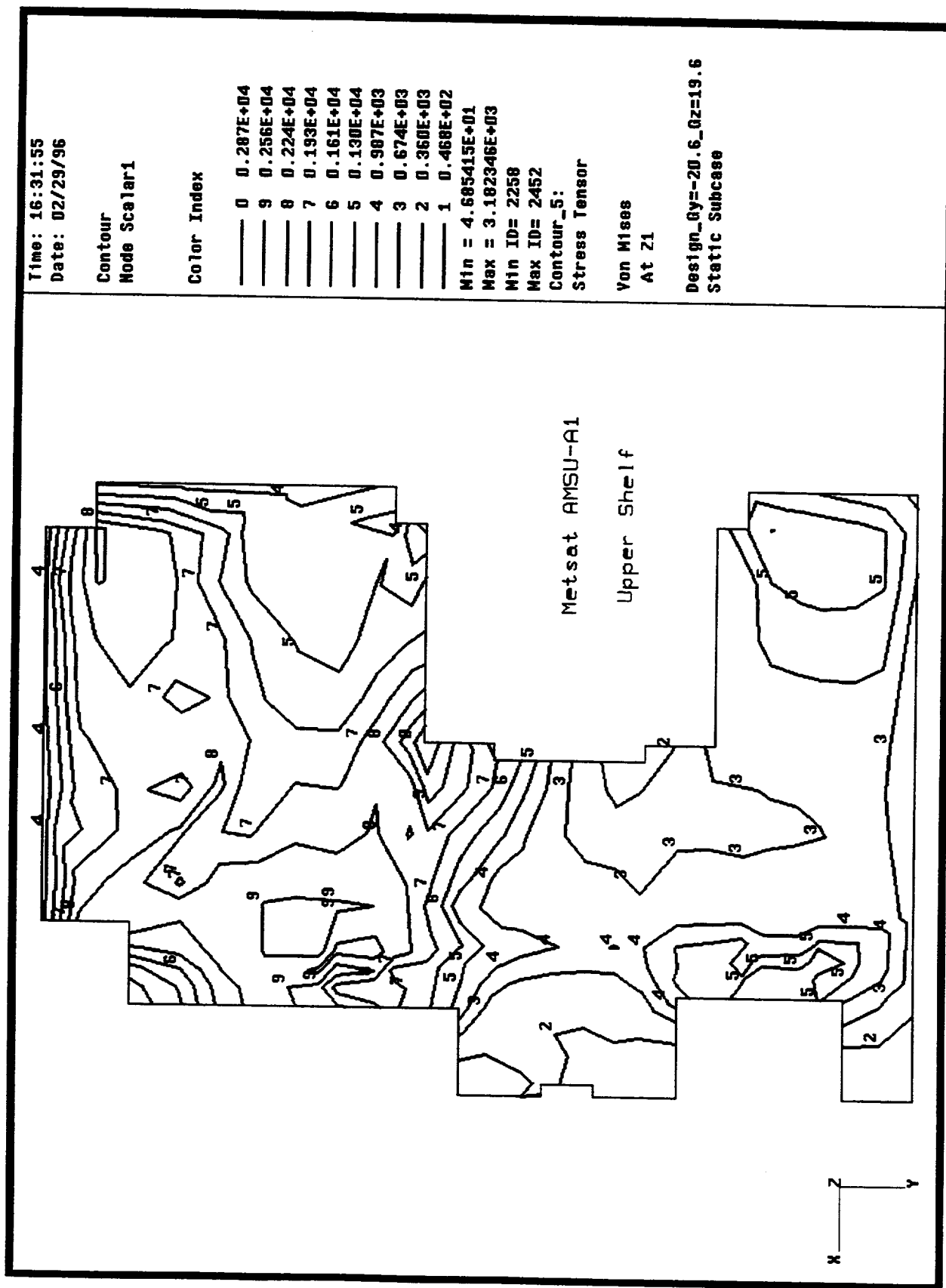
30.
-74.
-178.
-282.
-386.
-490.
-594.
-698.
-802.
-906.
-1010.
-1114.
-1218.
-1322.
-1426.
-1530.

-1530.

30.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6



Time: 16:19:55
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.314E+04
—	9	0.280E+04
—	8	0.245E+04
—	7	0.211E+04
—	6	0.176E+04
—	5	0.142E+04
—	4	0.108E+04
—	3	0.731E+03
—	2	0.387E+03
—	1	0.431E+02

Min = 4.311004E+01

Max = 3.484143E+03

Min ID= 2258

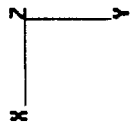
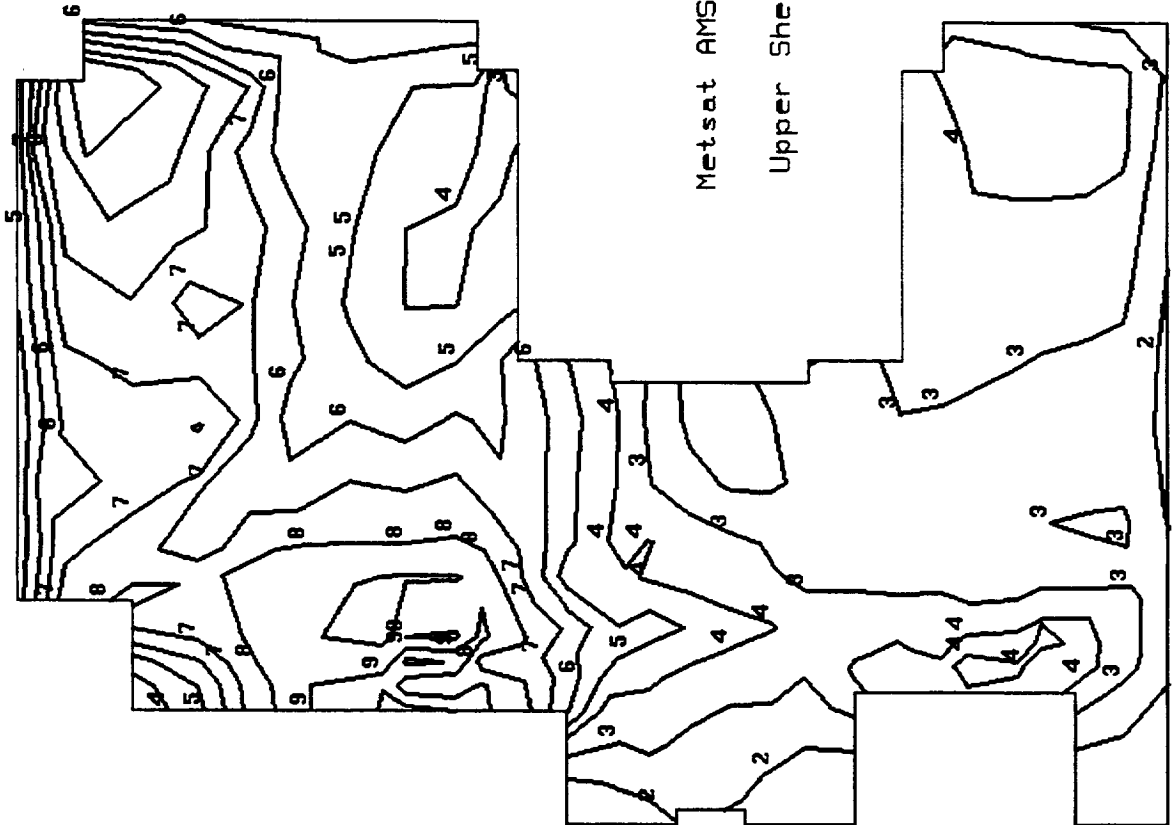
Max ID= 2569

Contour_6:

Stress Tensor

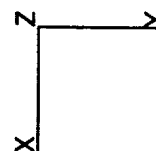
Von Mises
At 22

Design_Gy=-20.6_Gz=19.6
Static Subcase



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:13:28

Upper Shelf Beams



964.

-67.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

964.

895.

826.

758.

689.

620.

551.

483.

414.

345.

276.

208.

139.

70.

1.

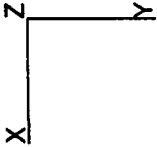
-67.

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:13:35

Upper Shelf Beams

-1597.

41.

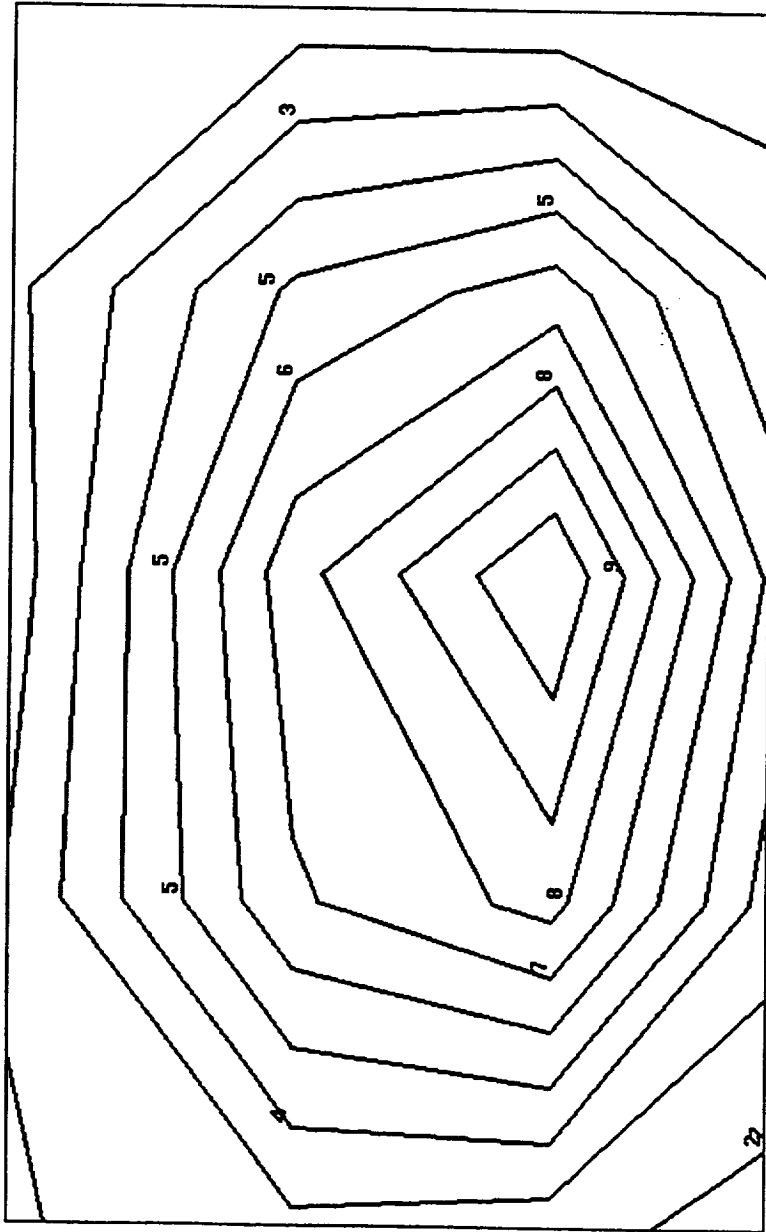


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

41.
-68.
-177.
-286.
-396.
-505.
-614.
-723.
-833.
-942.
-1051.
-1160.
-1270.
-1379.
-1488.
-1597.

Metsat AMSU-A1

Lower Right Front Support



Time: 14:22:41
Date: 02/29/96

Contour
Node Scalar1

Color Index

— 0	0.122E+03
— 9	0.110E+03
— 8	0.982E+02
— 7	0.861E+02
— 6	0.740E+02
— 5	0.620E+02
— 4	0.499E+02
— 3	0.378E+02
— 2	0.257E+02
— 1	0.137E+02

M1n = 1.366492E+01

Max = 1.343938E+02

M1n ID= 1172

Max ID= 2657

Contour_5:

Stress Tensor

Von Mises

At 21

Design_Oy=-20.6_Oz=19.6
Static Subcase

Time: 14:22:17
Date: 02/29/96

Contour
Node Scalar1

Color Index

— 0 0.111E+03
— 9 0.100E+03
— 8 0.892E+02
— 7 0.782E+02
— 6 0.672E+02
— 5 0.562E+02
— 4 0.452E+02
— 3 0.342E+02
— 2 0.233E+02
— 1 0.123E+02

Min = 1.227249E+01

Max = 1.221049E+02

Min ID= 2663

Max ID= 2658

Contour_6:

Stress Tensor

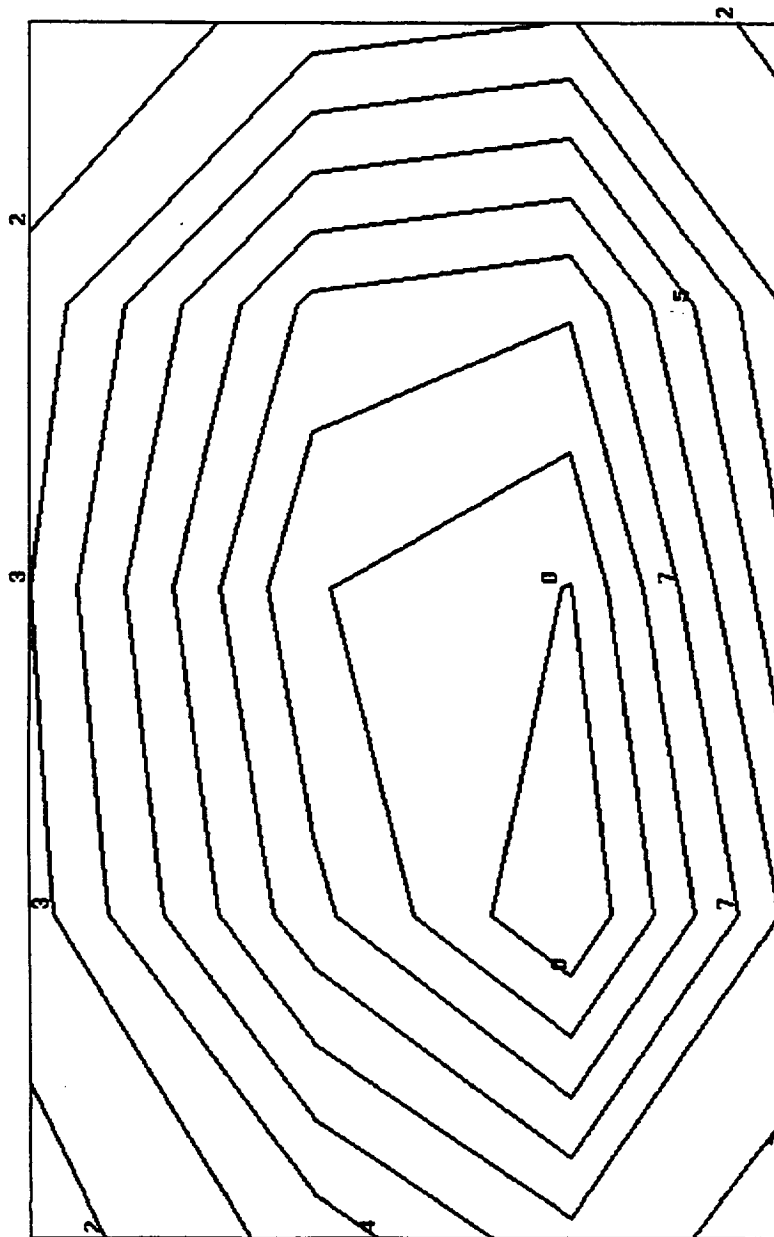
Von Mises

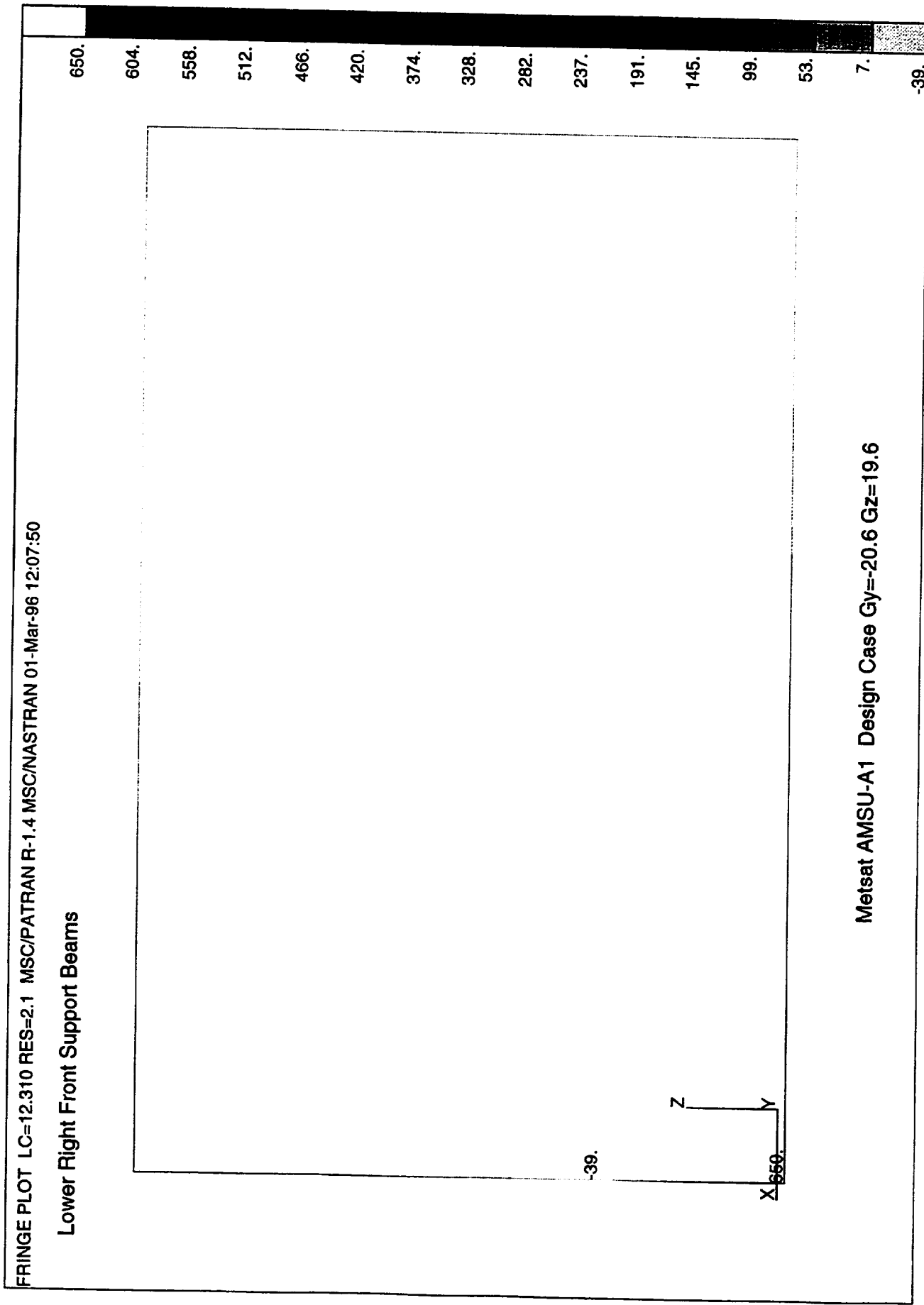
At Z2

Design_0y=-20.6_0z=19.6
Static Subcase

Metsat AMSU-A1

Lower Right Front Support





FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:08:02

Lower Right Front Support Beams



X 560.
Y 141.
Z

141.
94.
48.
.9
-46.
-92.
-139.
-186.
-233.
-279.
-326.
-373.
-419.
-466.
-513.
-560.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

Time: 14:02:23
Date: 02/29/96

Contour
Node Scalar1

Color Index

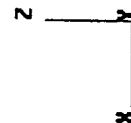
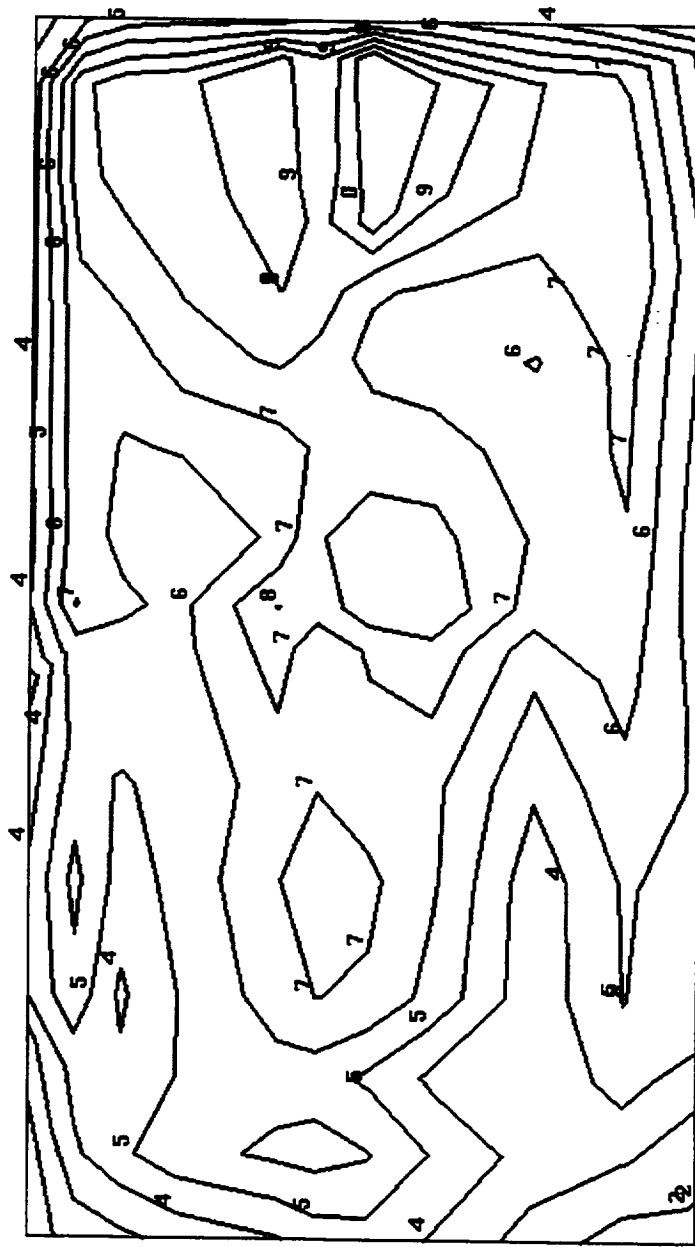
0	0.158E+04
9	0.142E+04
8	0.125E+04
7	0.108E+04
6	0.916E+03
5	0.749E+03
4	0.582E+03
3	0.415E+03
2	0.248E+03
1	0.805E+02

Min = 8.053658E+01
Max = 1.751609E+03
Min ID= 1205
Max ID= 1439
Contour_5:
Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0z=19.6
Static Subcase

Metsat AMSU-A1
Lower Right Panel



Time: 14:01:58
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.140E+04
9	0.126E+04
8	0.112E+04
7	0.978E+03
6	0.837E+03
5	0.696E+03
4	0.555E+03
3	0.414E+03
2	0.273E+03
1	0.132E+03

Min = 1.321795E+02

Max = 1.541772E+03

Min ID= 1205

Max ID= 1427

Contour_6:

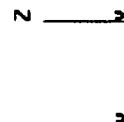
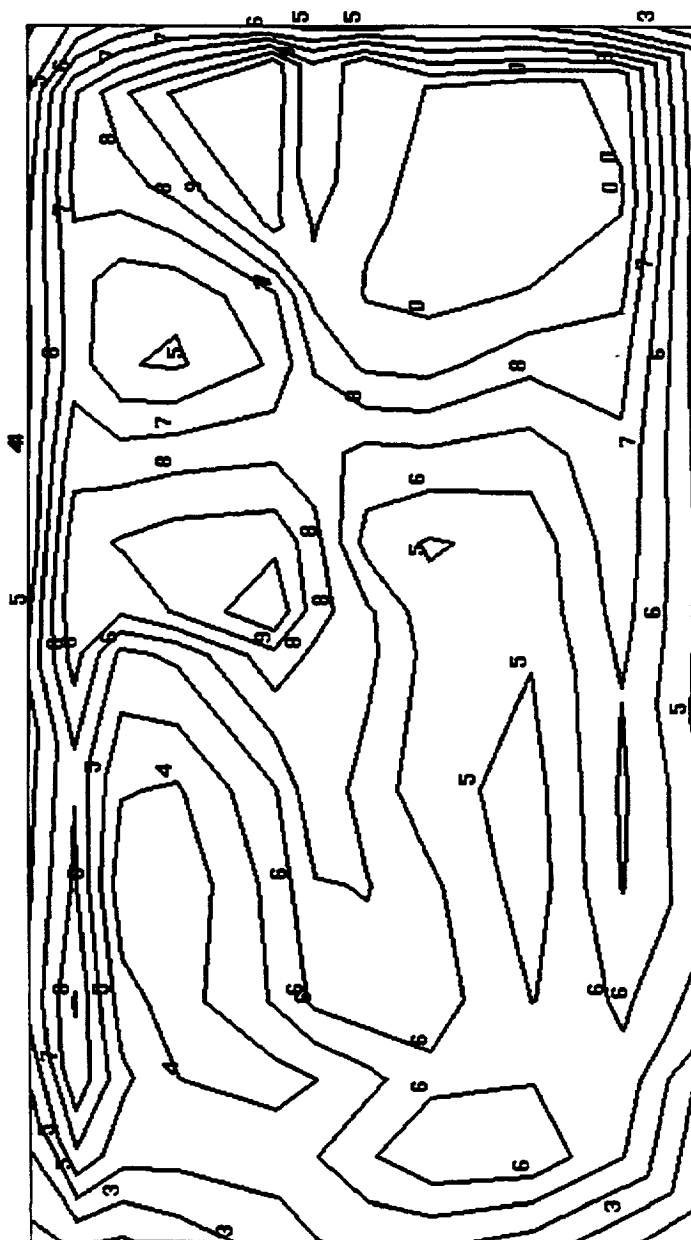
Stress Tensor

Von Mises

At Z2

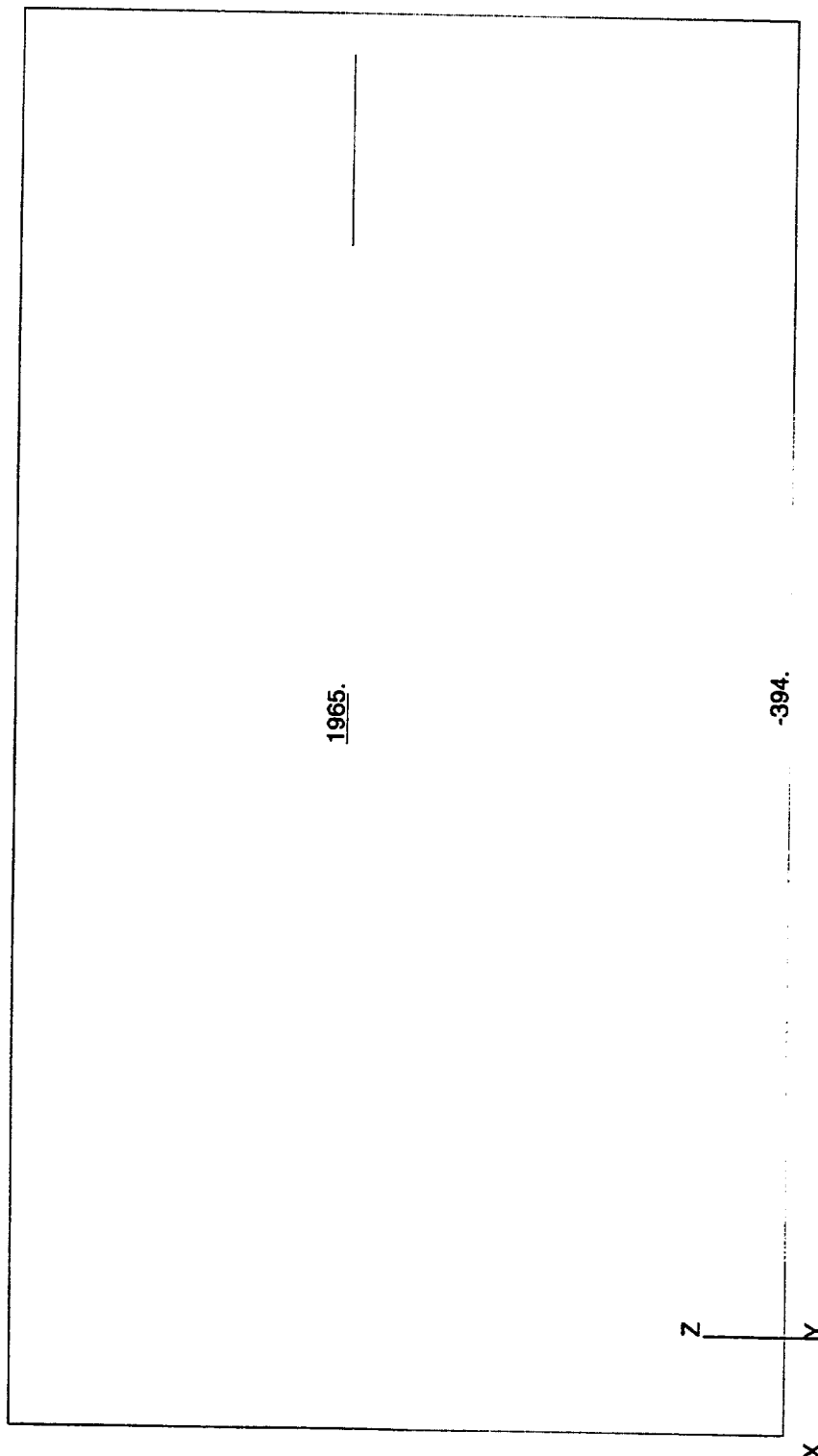
Design_Qy=-20.6_Qz=19.6
Static Subcase

Metsat AMSU-A1
Lower Right Panel



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:17:51

Lower Right Panel Beams



X
Y
Z

1965.

-394.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

1965.

1807.

1650.

1493.

1336.

1178.

1021.

864.

707.

549.

392.

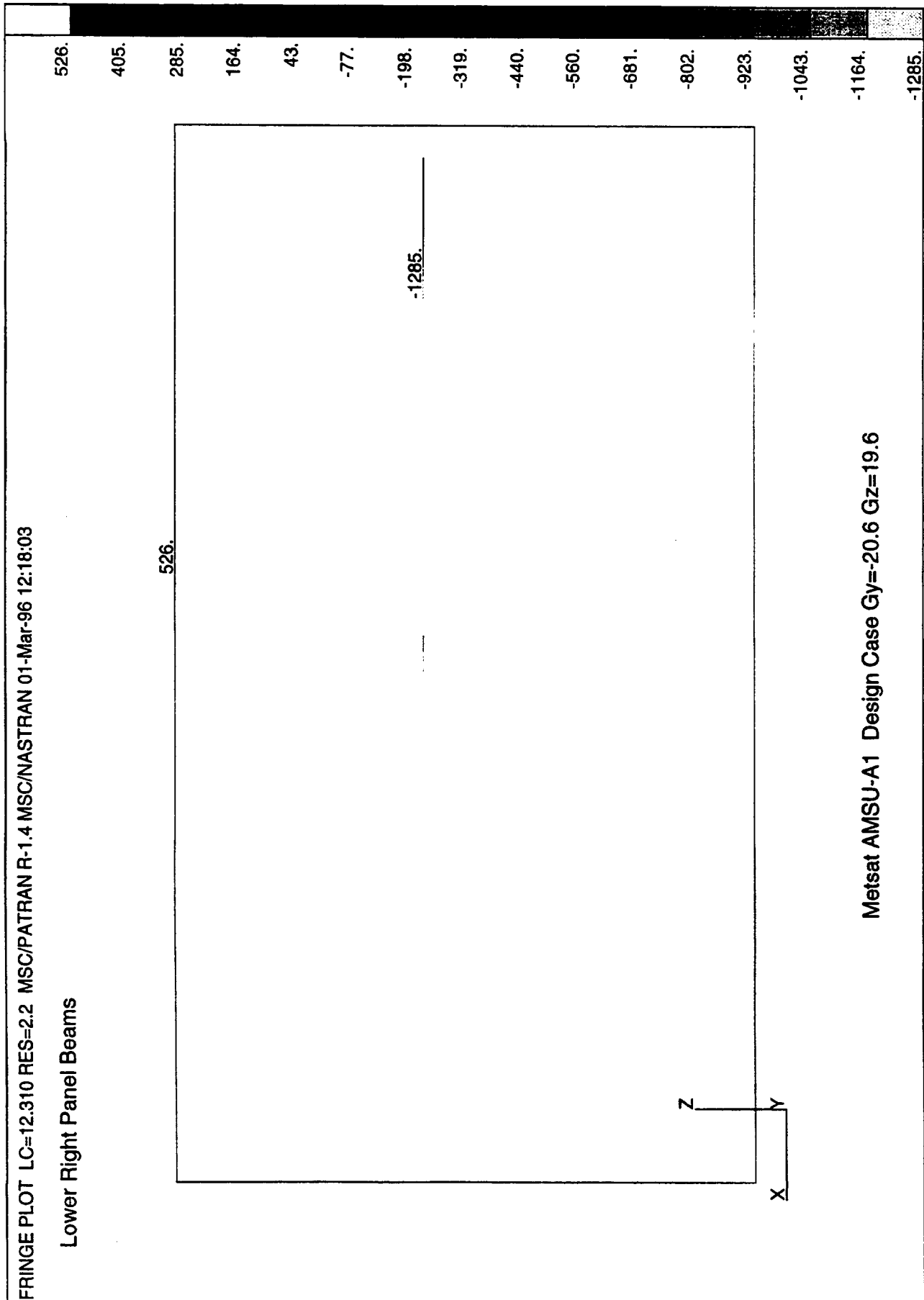
235.

77.

-80.

-237.

-394.



Time: 14:29:23
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.320E+03
9	0.289E+03
8	0.257E+03
7	0.225E+03
6	0.194E+03
5	0.162E+03
4	0.130E+03
3	0.983E+02
2	0.665E+02
1	0.348E+02

Min = 3.481052E+01

Max = 3.522108E+02

Min ID= 2691

Max ID= 2669

Contour_5:

Stress Tensor

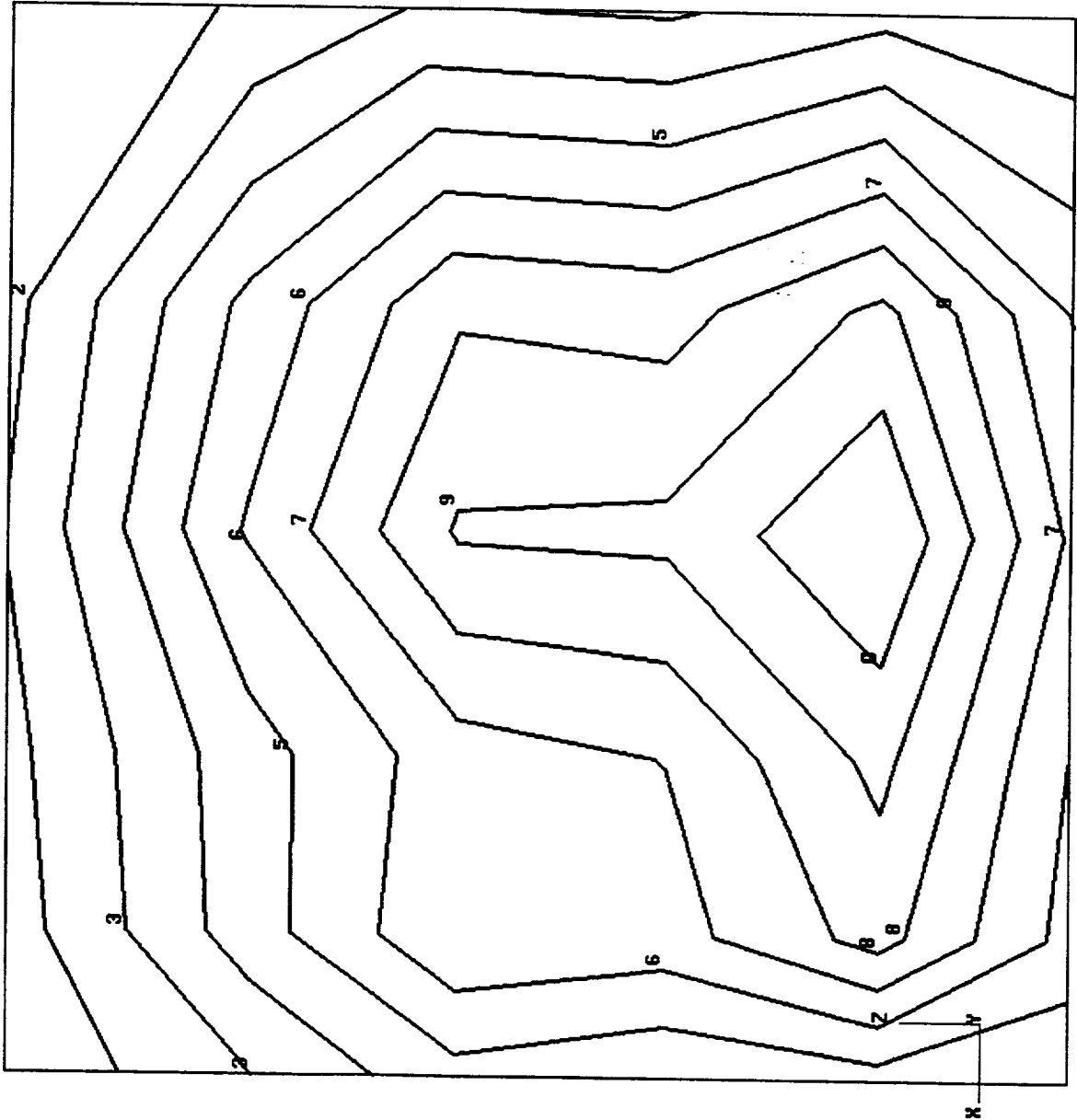
Von Mises
At Z1

Design_Qy=-20.6_Qz=19.6
Static Subcase

Metsat AMSU-A1

Upper Right

Front Support



Time: 14:32:18
Date: 02/29/96

Contour
Mode Scalar1

Color Index

—	0	0.309E+03
—	9	0.282E+03
—	8	0.255E+03
—	7	0.228E+03
—	6	0.201E+03
—	5	0.174E+03
—	4	0.147E+03
—	3	0.120E+03
—	2	0.934E+02
—	1	0.664E+02

Min = 6.644884E+01

Max = 3.359696E+02

Min ID= 1998

Max ID= 2670

Contour_6:

Stress Tensor

Von Mises

At Z2

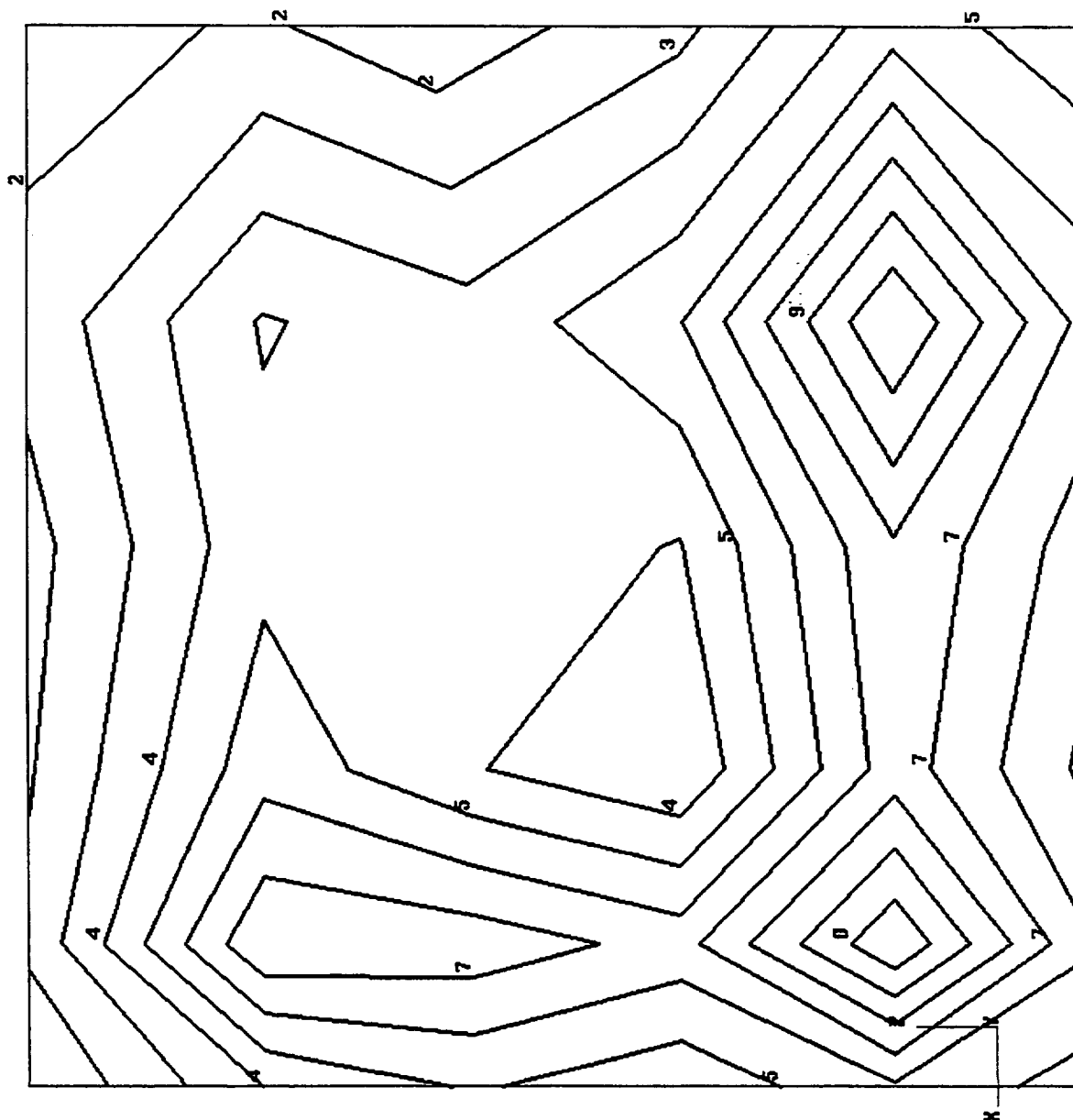
Design_0y=-20.6_Gz=19.6

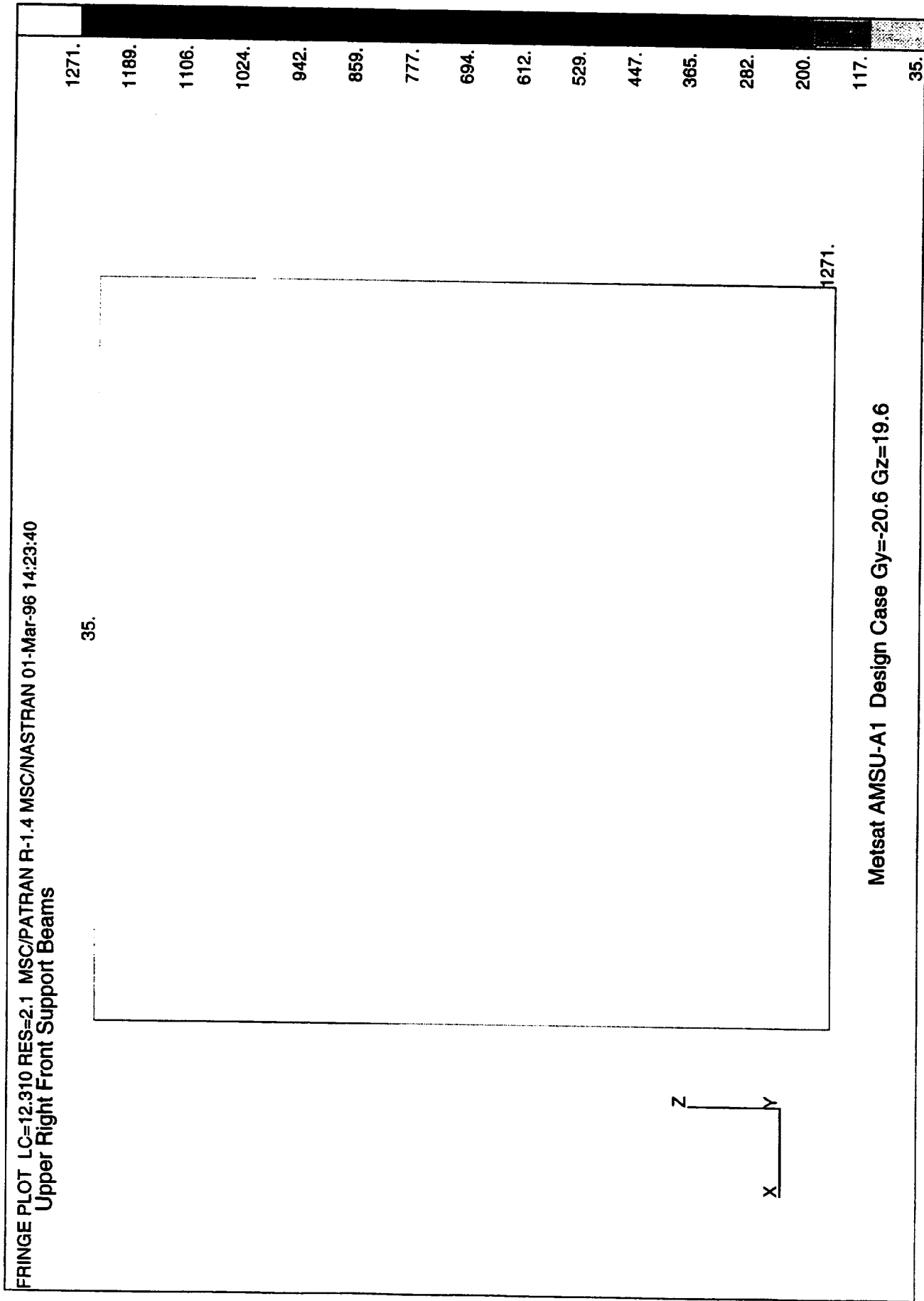
Static Subcase

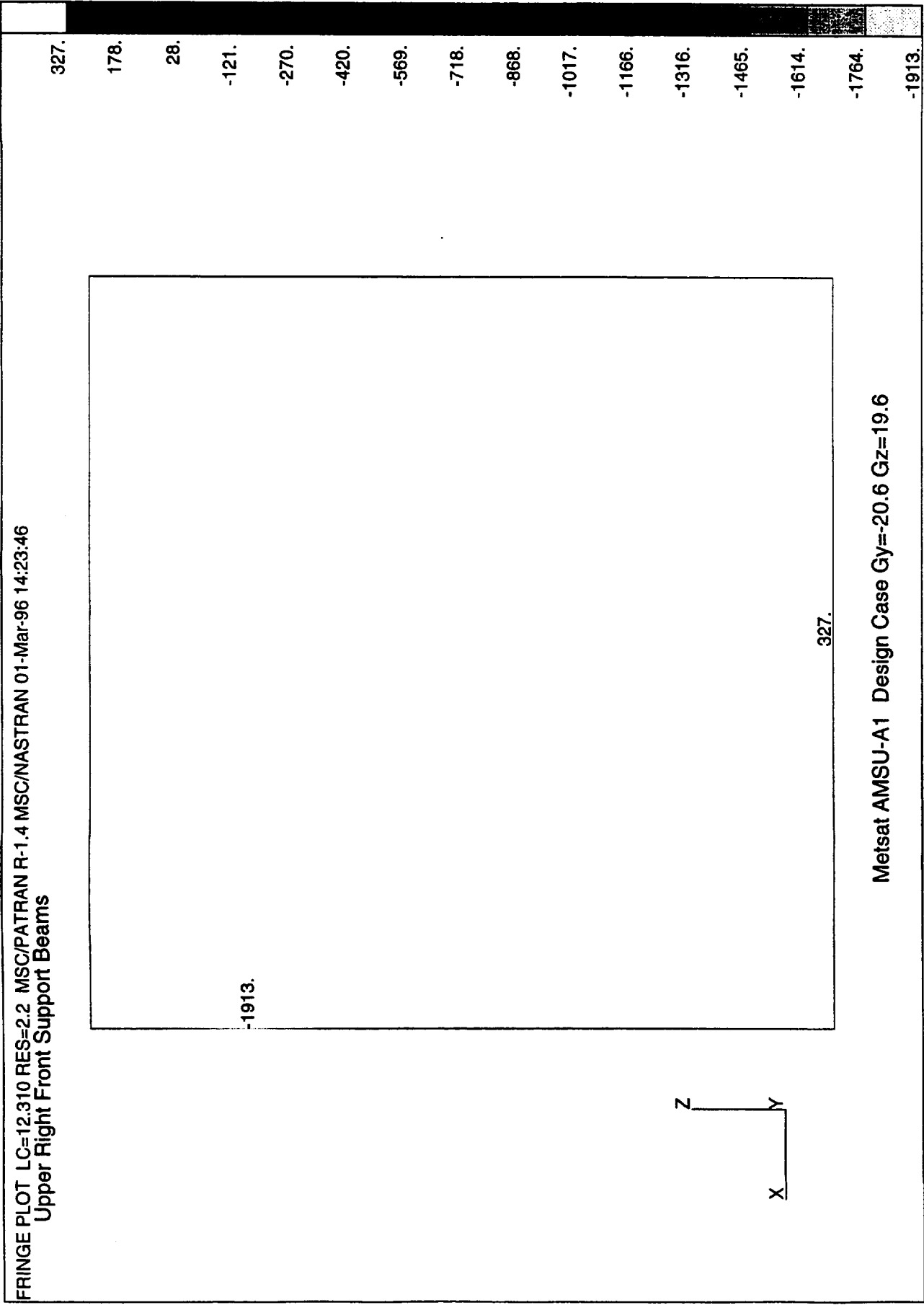
Metsat AMSU-A1

Upper Right

Front Support







Time: 14:42:35
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.805E+03
1	0.725E+03
2	0.645E+03
3	0.565E+03
4	0.485E+03
5	0.405E+03
6	0.324E+03
7	0.244E+03
8	0.164E+03
9	0.838E+02

Min = 8.378809E+01

Max = 8.856335E+02

Min ID= 2150

Max ID= 1375

Contour_5:

Stress Tensor

Von Mises

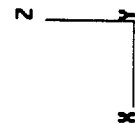
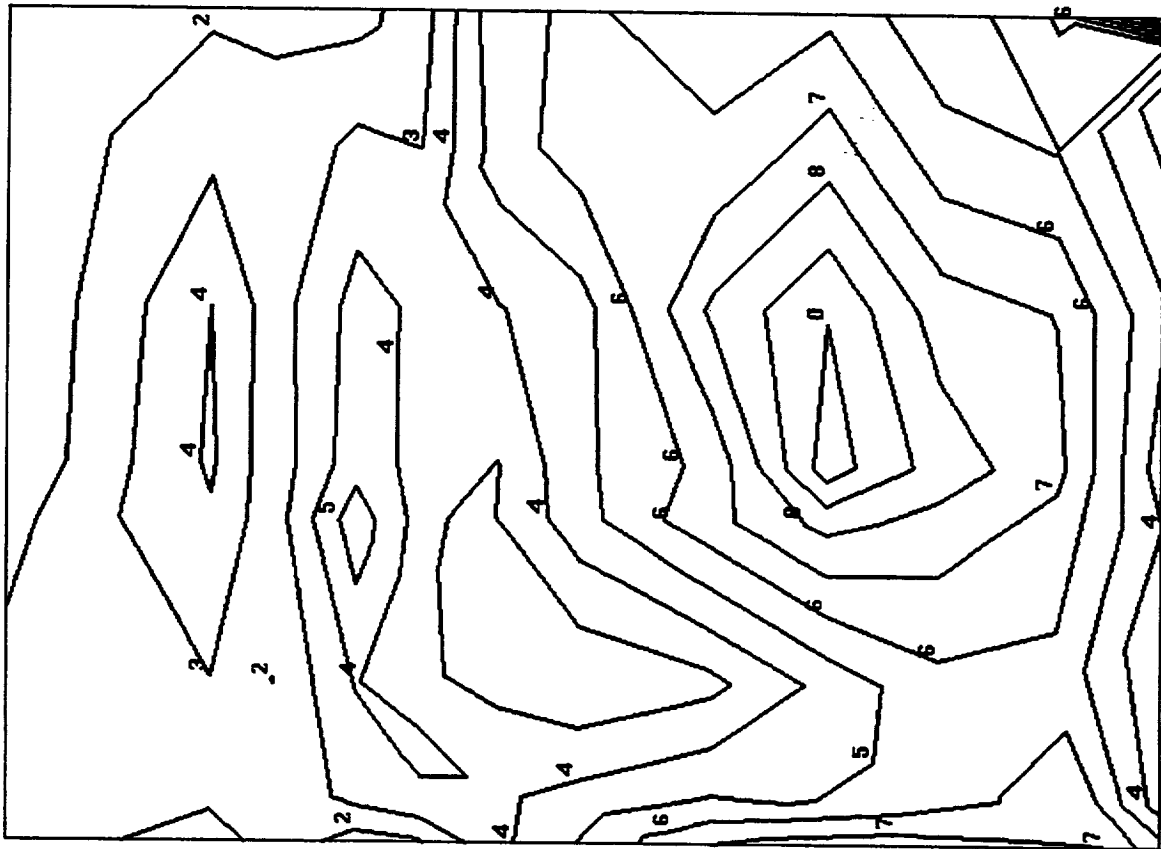
At Z1

Design_Oy=-20.6_Oz=19.6

Static Subcase

Metsat AMSU-A1

Upper Right Panel



Time: 14:42:10
Date: 02/29/96

Contour
Node Scalar1

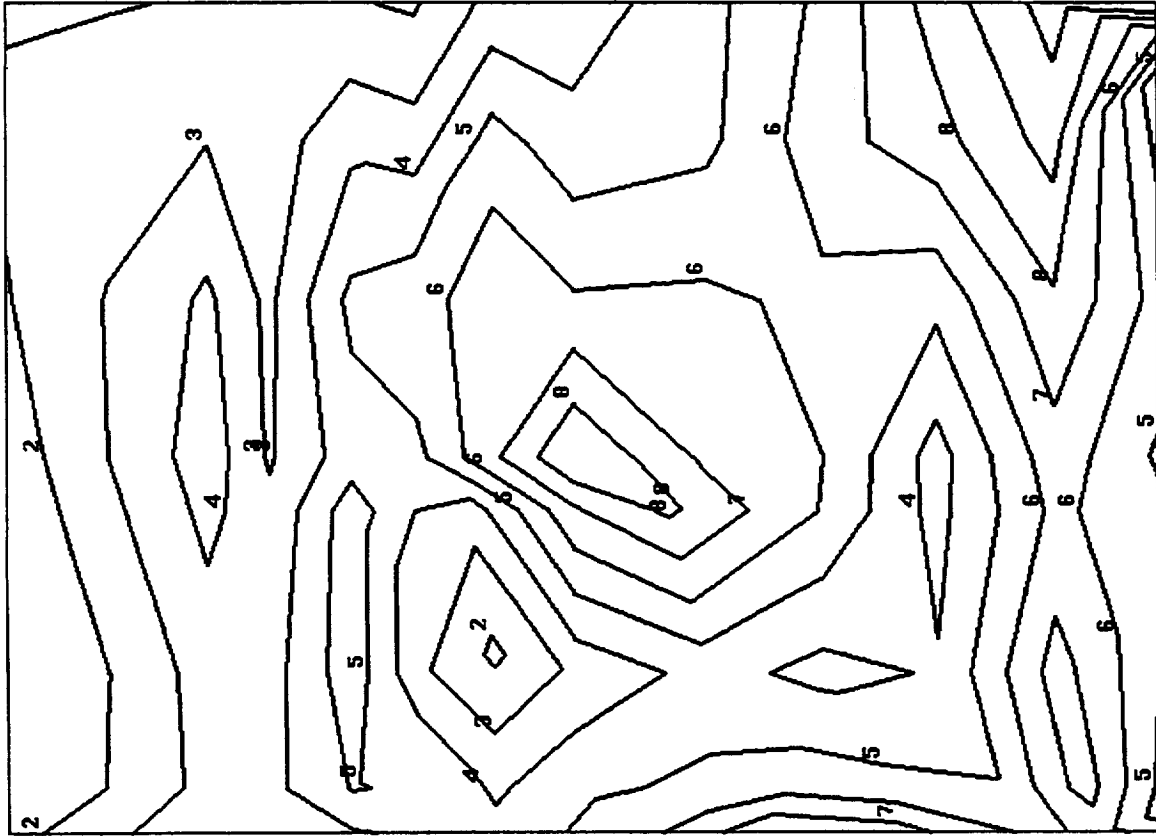
Color Index	
0	0.785E+03
9	0.703E+03
8	0.621E+03
7	0.539E+03
6	0.457E+03
5	0.374E+03
4	0.292E+03
3	0.210E+03
2	0.128E+03
1	0.457E+02

Min = 4.571311E+01
Max = 8.674910E+02
Min ID= 2186
Max ID= 1375
Contour_6:
Stress Tensor

Von Mises
At 22

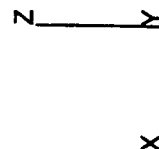
Design_Gy=-20.6_Az=19.6
Static Subcase

Metsat AMSU-A1
Upper Right Panel



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R1.4 MSC/NASTRAN 01-Mar-96 14:20:15

Upper Right Panel Beams



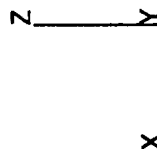
.000000001 926.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

926.
865.
803.
741.
679.
618.
556.
494.
432.
371.
309.
247.
185.
124.
62.
-00005

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:20:23

Upper Right Panel Beams

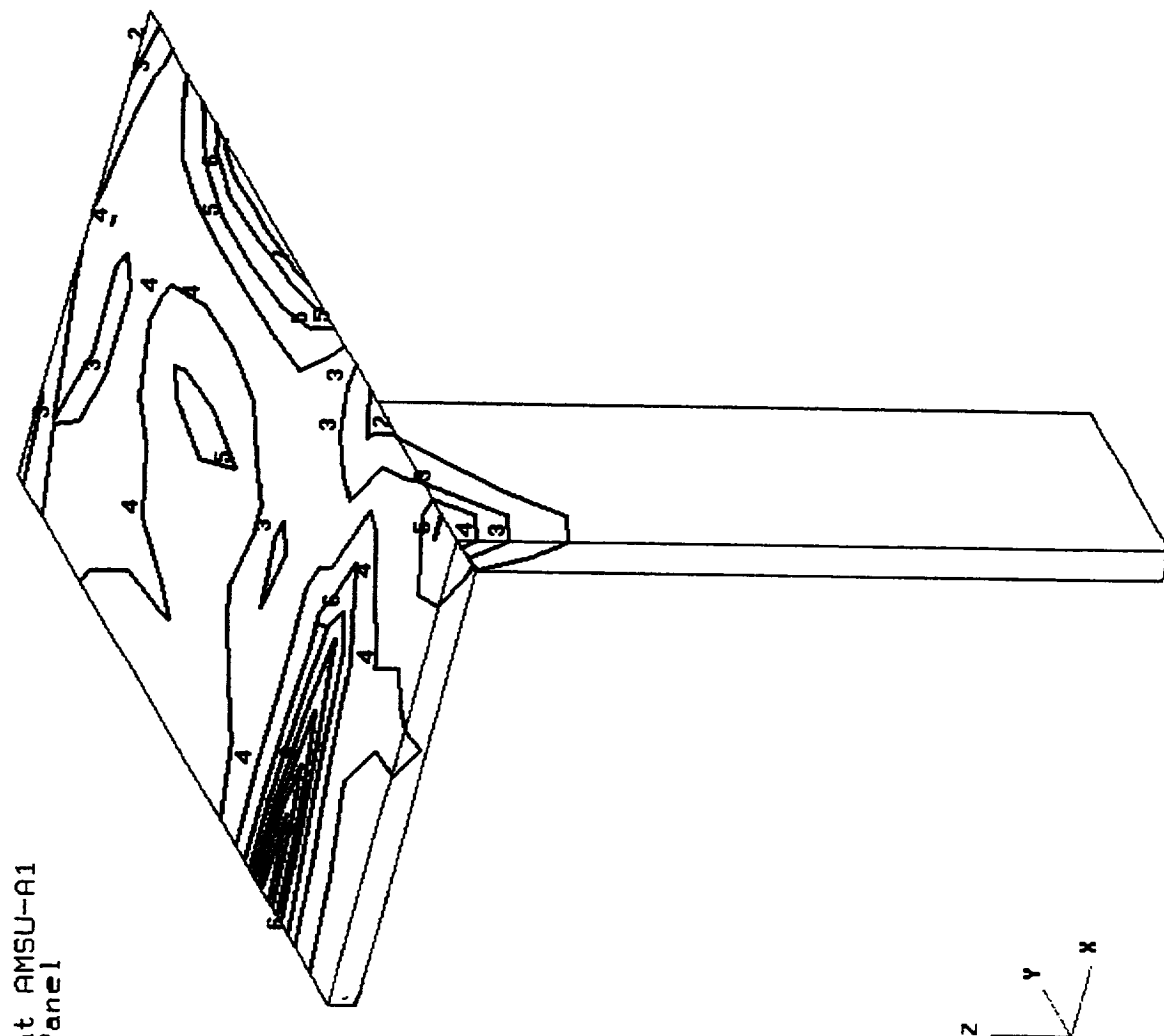


-551. 213.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

213.
162.
111.
60.
9.
-42.
-93.
-144.
-195.
-246.
-297.
-348.
-399.
-450.
-501.
-551.

Metsat AMSU-A1
Top Panel



Time: 10:53:13
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.149E+04
9	0.139E+04
8	0.116E+04
7	0.100E+04
6	0.839E+03
5	0.677E+03
4	0.514E+03
3	0.351E+03
2	0.189E+03
1	0.263E+02

Min = 2.626101E+01
Max = 1.652125E+03
Min ID= 11151
Max ID= 11021

Contour_5:

Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0z=19.6
Static Subcase

Time: 10:52:33
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.142E+04
9	0.127E+04
8	0.111E+04
7	0.956E+03
6	0.800E+03
5	0.644E+03
4	0.488E+03
3	0.332E+03
2	0.177E+03
1	0.207E+02

Min = 2.069353E+01

Max = 1.579510E+03

Min ID= 11177

Max ID= 11021

Contour_6:

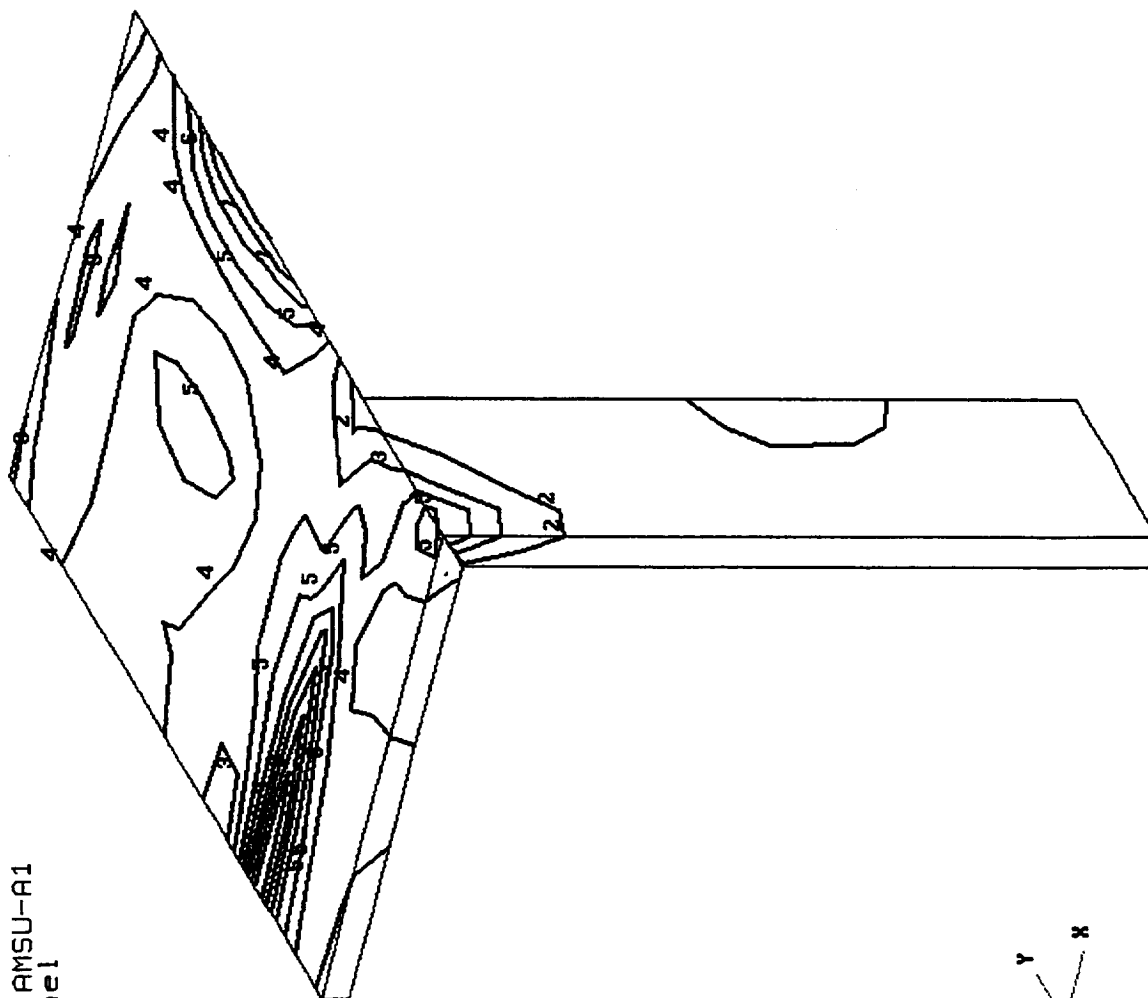
Stress Tensor

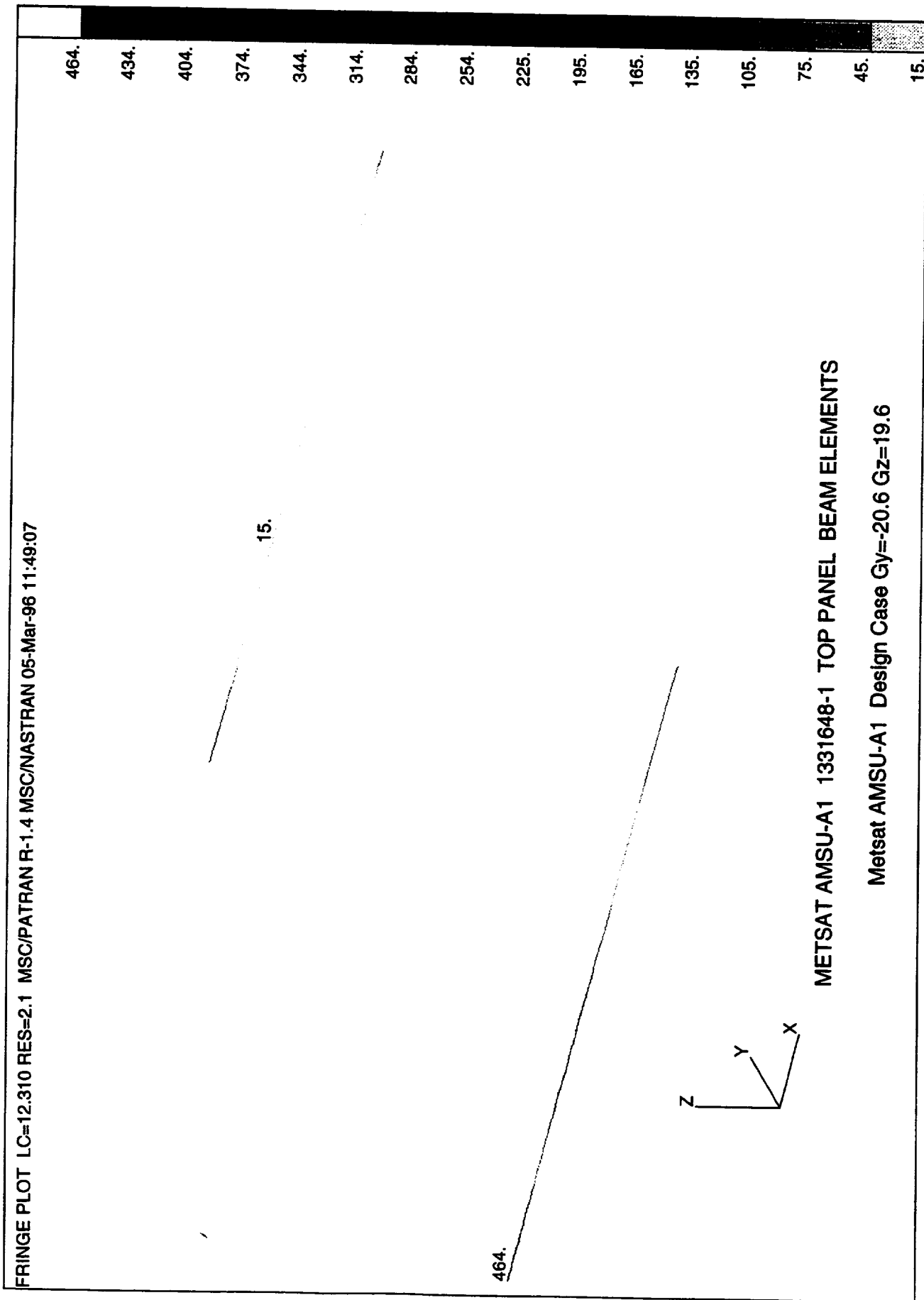
Von Mises

At 22

Design_0y=-20.6_0z=19.6
Static Subcase

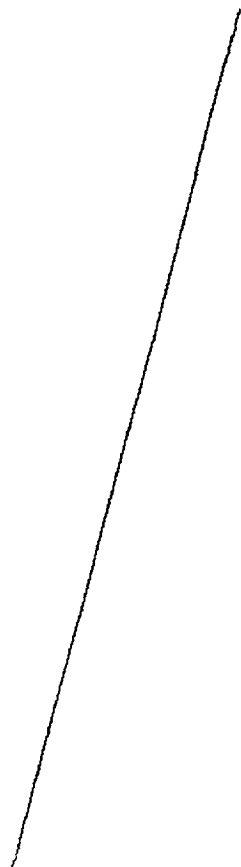
Metsat AMSU-A1
Top Panel





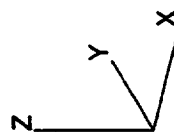
FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:49:13

55.
29.
3.
-24.
-50.
-76.
-102.
-128.
-154.
-180.
-206.
-232.
-258.
-285.
-311.
-337.



-337.

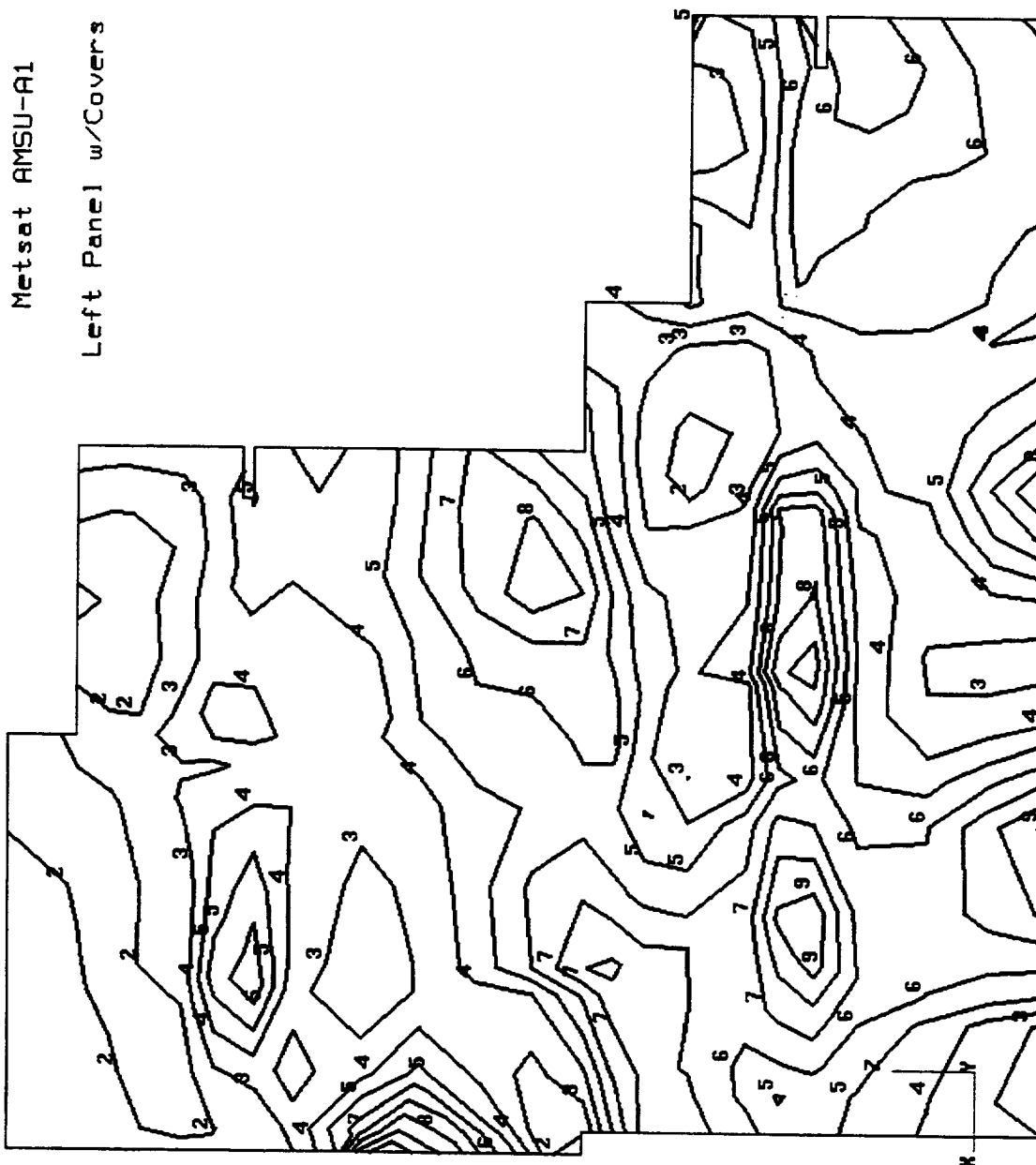
55.



METSAT AMSU-A1 1331648-1 TOP PANEL BEAM ELEMENTS

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

Metsat AMSU-A1
Left Panel w/Covers



Time: 13:54:06
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.156E+04
1	0.140E+04
2	0.124E+04
3	0.107E+04
4	0.905E+03
5	0.741E+03
6	0.576E+03
7	0.411E+03
8	0.246E+03
9	0.815E+02

Min = 8.153932E+01
Max = 1.729423E+03
Min ID= 2124
Max ID= 2231
Contour_5:
Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0z=19.6
Static Subcase

Time: 13:54:34
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.146E+04
9	0.132E+04
8	0.117E+04
7	0.103E+04
6	0.885E+03
5	0.741E+03
4	0.597E+03
3	0.453E+03
2	0.309E+03
1	0.165E+03

Min = 1.652638E+02

Max = 1.604870E+03

Min ID= 3299

Max ID= 1008

Contour_6:

Stress Tensor

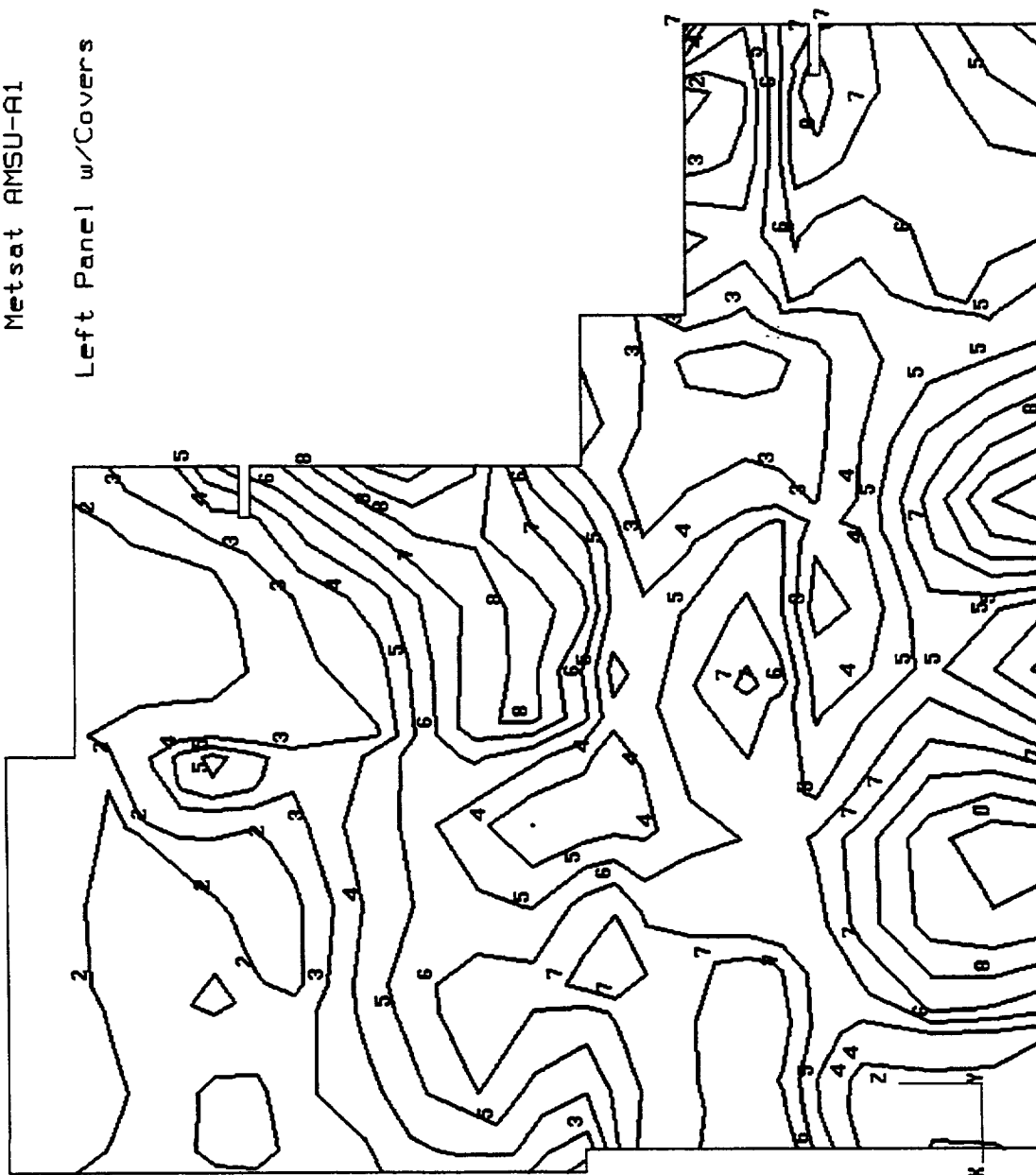
Von Mises

At Z2

Design_Ry=-20.6_Gz=19.6
Static Subcase

Metsat AMSU-A1

Left Panel w/Covers



Time: 16:32:52
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.762E+03
9	0.679E+03
8	0.596E+03
7	0.513E+03
6	0.430E+03
5	0.348E+03
4	0.265E+03
3	0.182E+03
2	0.988E+02
1	0.159E+02

Min = 1.591342E+01

Max = 8.449711E+02

Min ID= 2563

Max ID= 2914

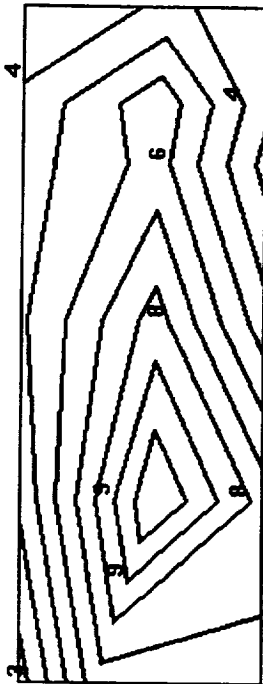
Contour_5:

Stress Tensor

Von Mises

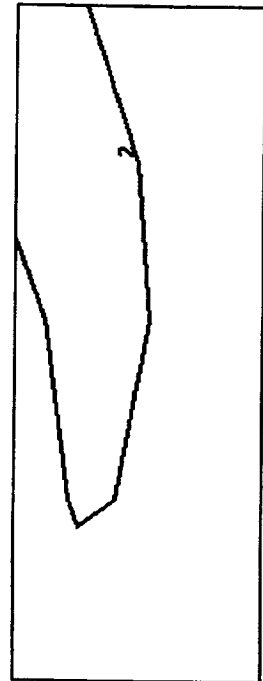
At 21

Design_0y=-20.6_0z=19.6
Static Subcase

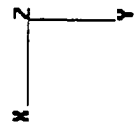


Lower Left

Metsat AMSU-A1
Shields



Lower Right



Time: 16:36:04
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.673E+03
9	0.599E+03
8	0.526E+03
7	0.452E+03
6	0.378E+03
5	0.304E+03
4	0.230E+03
3	0.156E+03
2	0.825E+02
1	0.064E+01

Min = 8.638497E+00

Max = 7.471401E+02

Min ID= 2663

Max ID= 2914

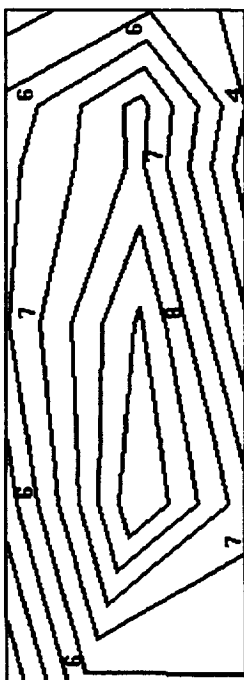
Contour_6:

Stress Tensor

Von Mises

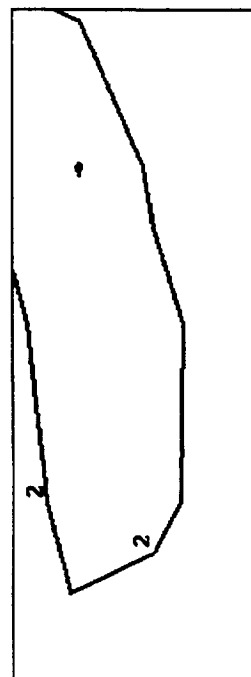
At 22

Design_Oy=-20.6_Oz=19.6
Static Subcase

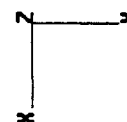


Lower Left

Metsat AMSU-A1
Shields

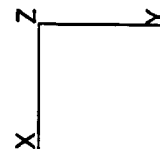
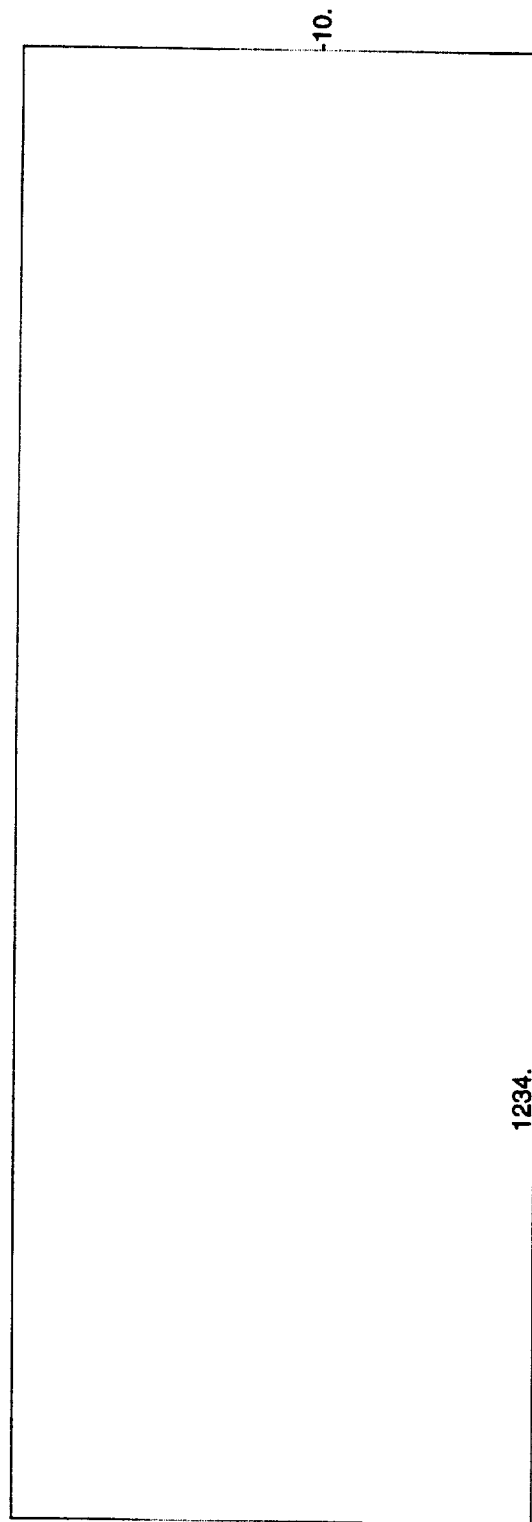


Lower Right



FRINGE PLOT LC=12:310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:33:19

Lower Left Shield Beams



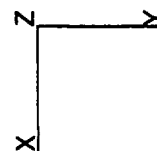
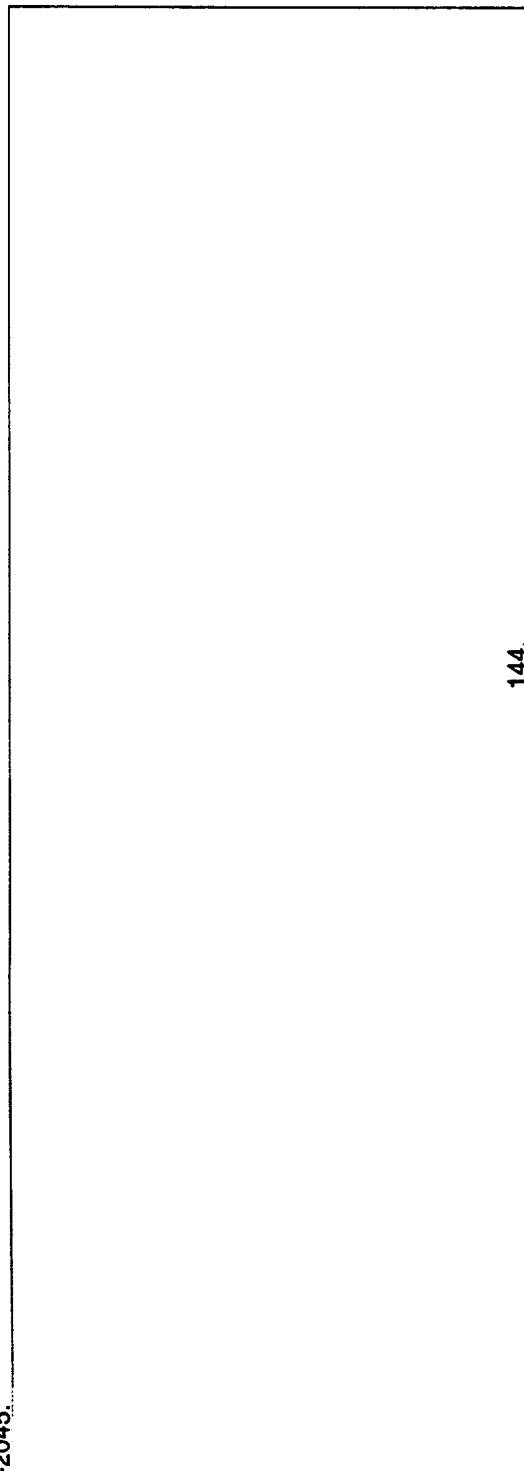
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

1234.
1151.
1068.
985.
902.
819.
736.
653.
570.
488.
405.
322.
239.
156.
73.
-10.

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:33:25

Lower Left Shield Beams

-2045.

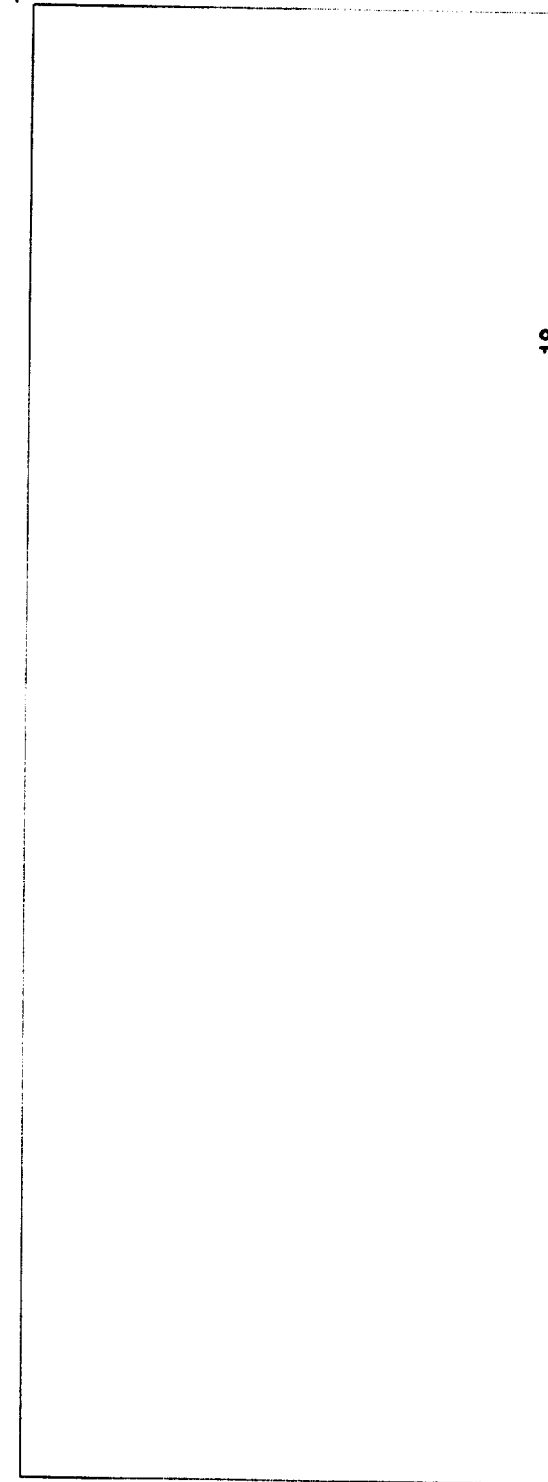


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

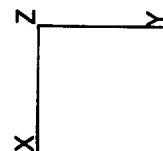
144.
-2.
-148.
-294.
-440.
-586.
-732.
-878.
-1024.
-1170.
-1316.
-1462.
-1607.
-1753.
-1899.
-2045.

FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:24:32

Lower Right Shield Beams



18.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:24:43

Lower Right Shield Beams

36.

-909.

36.

-27.

-90.

-153.

-216.

-279.

-342.

-405.

-468.

-531.

-594.

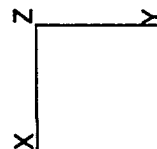
-657.

-720.

-783.

-846.

-909.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

Time: 16:53:12
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.366E+03
9	0.329E+03
8	0.293E+03
7	0.256E+03
6	0.219E+03
5	0.182E+03
4	0.146E+03
3	0.109E+03
2	0.721E+02
1	0.353E+02

Min = 3.533493E+01

Max = 4.029586E+02

Min ID= 1998

Max ID= 2931

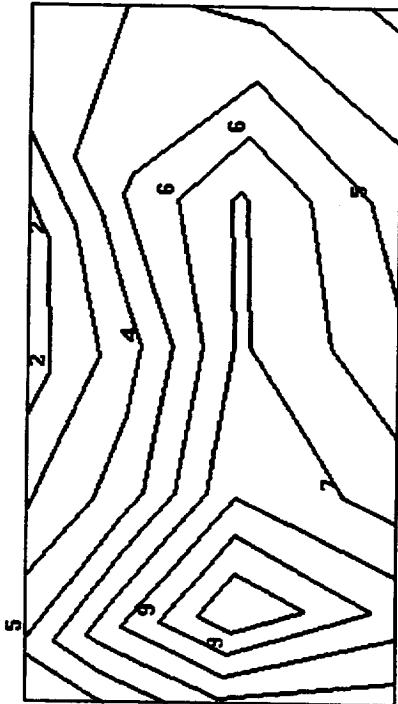
Contour_5:

Stress Tensor

Von Mises

At 21

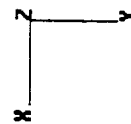
Design_0y=-20.6_0z=19.6
Static Subcase



Upper Left

Metsat AMSU-A1
Shields

Upper Right



Time: 16:54:51
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.263E+03
9	0.238E+03
8	0.213E+03
7	0.188E+03
6	0.162E+03
5	0.137E+03
4	0.112E+03
3	0.865E+02
2	0.613E+02
1	0.360E+02

Min = 3.598609E+01

Max = 2.887073E+02

Min ID= 1998

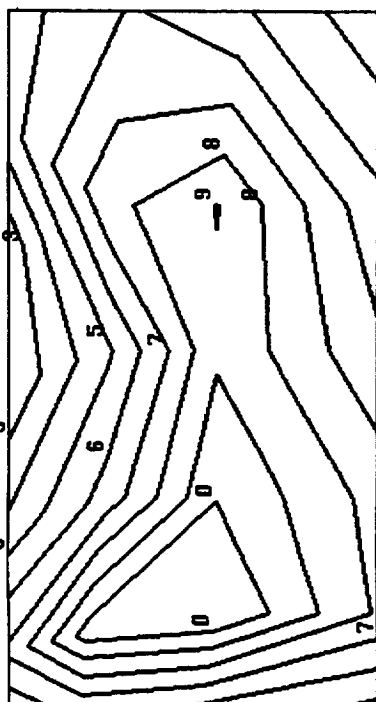
Max ID= 2931

Contour_6:

Stress Tensor

Von Mises
At 22

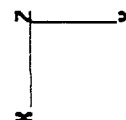
Design_Ry=-20.6_0z=19.6
Static Subcase



Upper Left

Metsat AMSU-A1
Shields

Upper Right



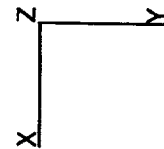
FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:42:51

Upper Left Shield Beams

1196.



-144.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

1196.

1107.

1018.

928.

839.

750.

660.

571.

482.

392.

303.

214.

124.

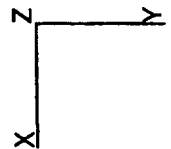
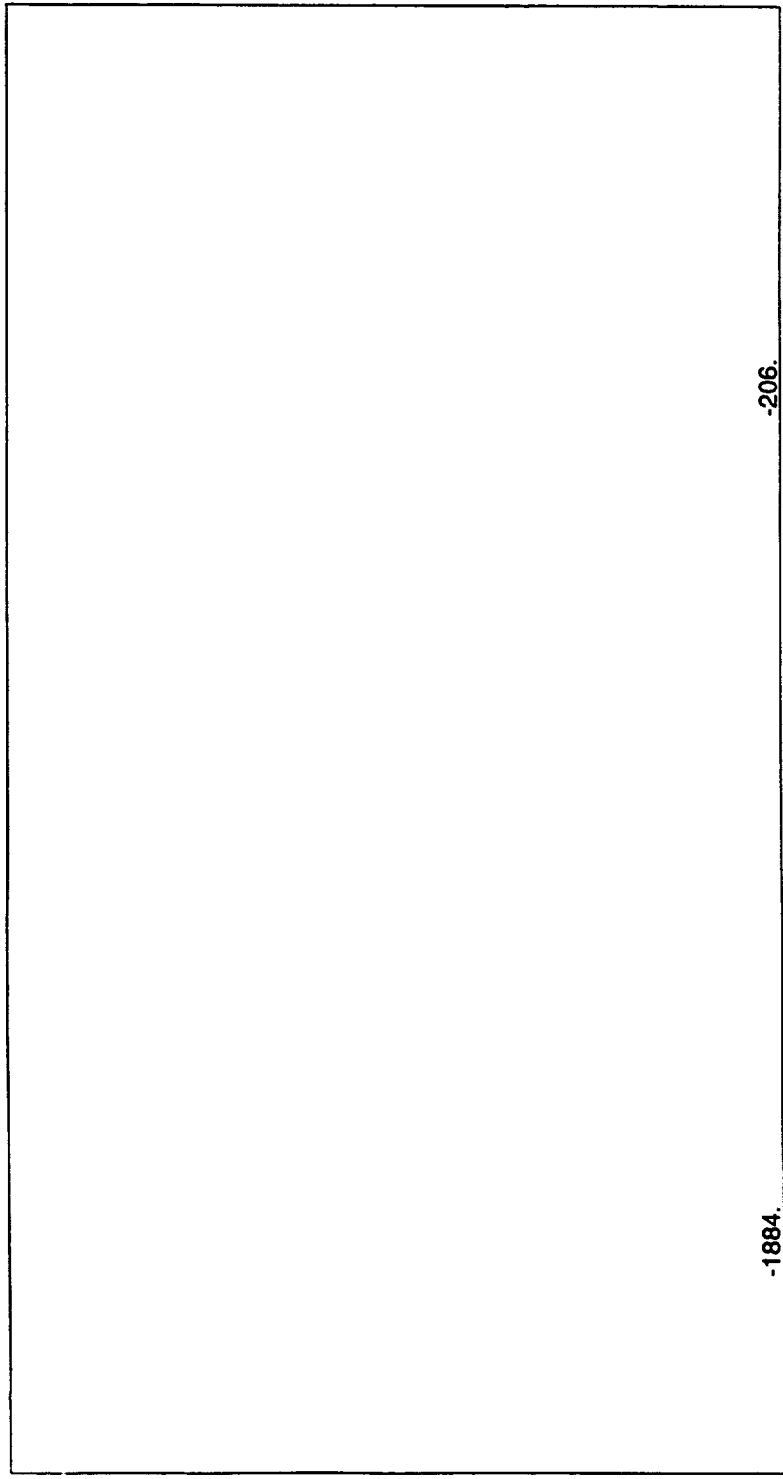
35.

-54.

-144.

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:42:58

Upper Left Shield Beams



-206.

-1884.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

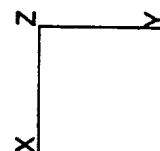
-206.
-318.
-430.
-542.
-653.
-765.
-877.
-989.
-1101.
-1213.
-1325.
-1437.
-1549.
-1660.
-1772.
-1884.

FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:36:54

Upper Right Shield Beams

470.

35.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

470.

441.

412.

383.

354.

325.

296.

267.

238.

209.

180.

151.

122.

93.

64.

35.

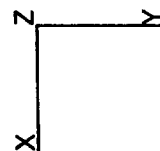
FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:37:01

Upper Right Shield Beams

-425.

122.

122.
85.
49.
12.
-24.
-60.
-97.
-133.
-170.
-206.
-243.
-279.
-315.
-352.
-388.
-425.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

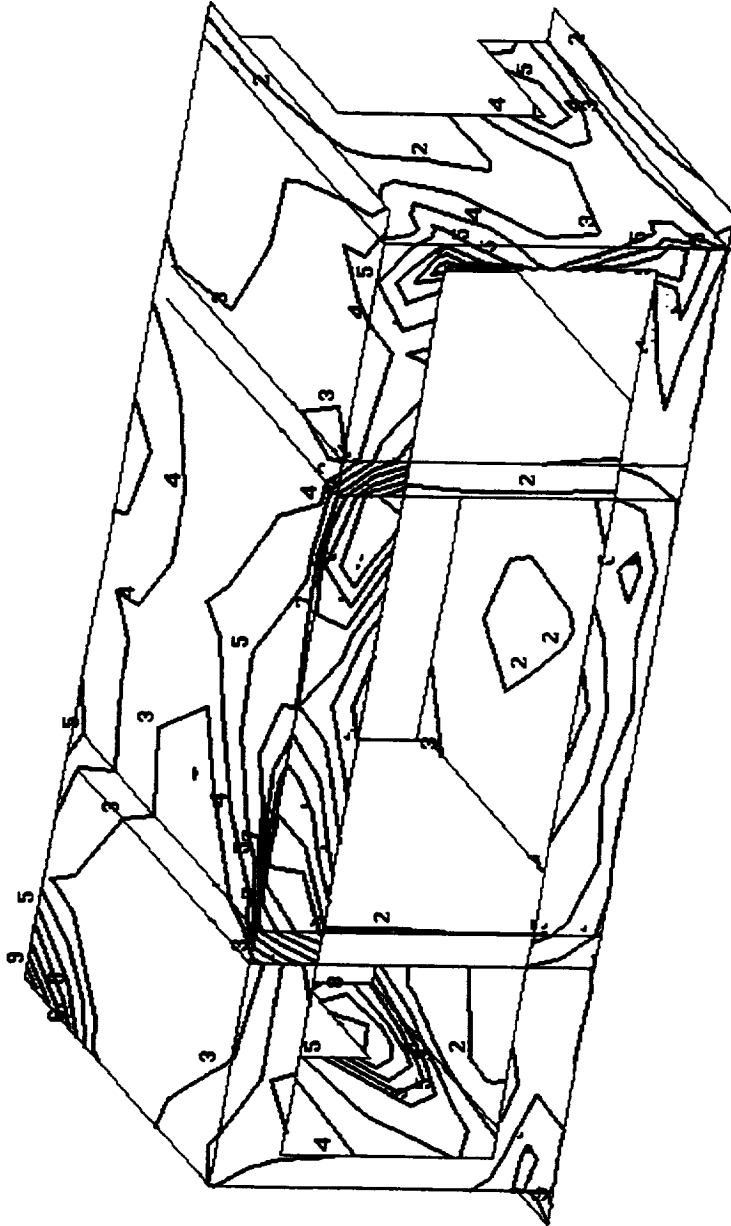
Metsat AMSU-A1
Lower Card Cage/Cards

Time: 12:45:10
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.280E+04
9	0.249E+04
8	0.218E+04
7	0.187E+04
6	0.156E+04
5	0.125E+04
4	0.940E+03
3	0.629E+03
2	0.319E+03
1	0.891E+01

Min = 8.912640E+00
Max = 3.111052E+03
Min ID= 4831
Max ID= 3733
Contour_5:
Stress Tensor
Von Mises
At Z1
Design_0y=-20.6_0z=19.6
Static Subcase



Metsat AMSU-A1
Lower Card Cage/Cards

Time: 12:34:24
Date: 02/29/96

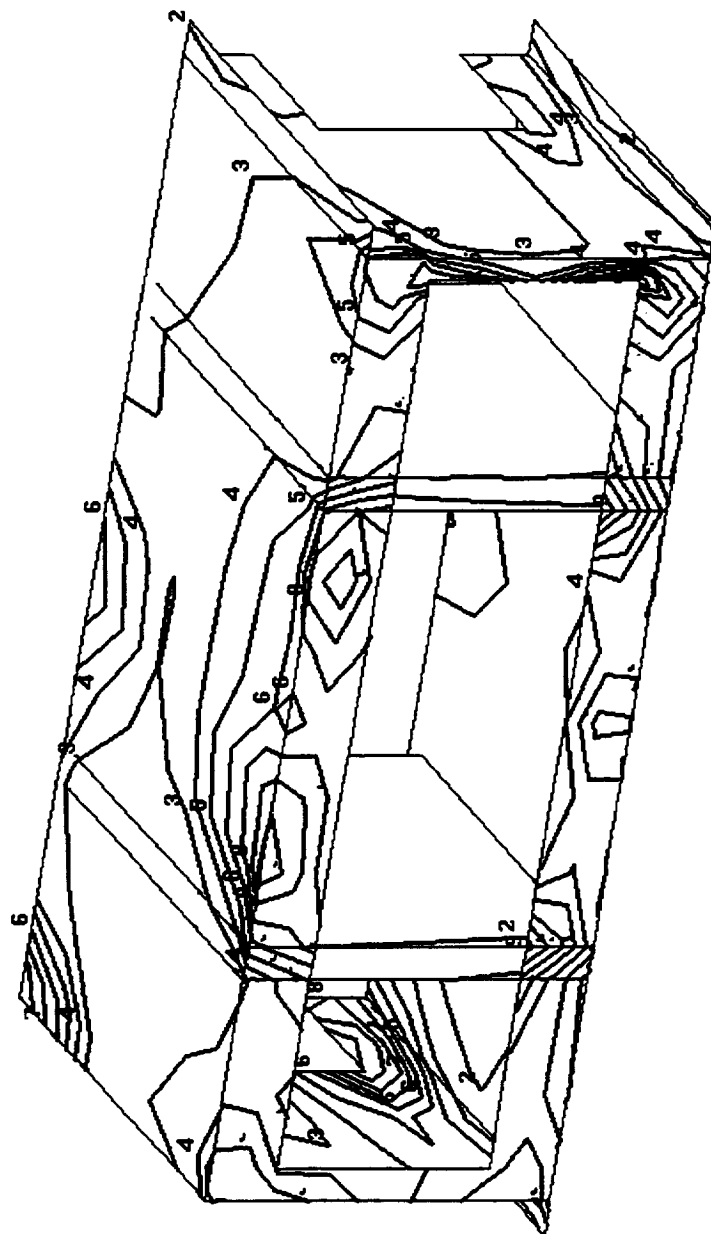
Contour
Node Scalar1

Color Index	
0	0.257E+04
9	0.229E+04
8	0.200E+04
7	0.172E+04
6	0.143E+04
5	0.115E+04
4	0.062E+03
3	0.577E+03
2	0.292E+03
1	0.651E+01

Min = 6.500100E+00
Max = 2.857176E+03
Min ID= 4831
Max ID= 3852
Contour_6:
Stress Tensor

Von Mises
At 22

Design_Gy=-20.6_Gz=19.6
Static Subcase



Metsat AMSU-A1 Lower Card Cage Card

Time: 06:03:15
Date: 03/01/96

Contour
Node Scalar1

Color Index

0	0.897E+03
9	0.798E+03
8	0.700E+03
7	0.602E+03
6	0.503E+03
5	0.405E+03
4	0.307E+03
3	0.208E+03
2	0.110E+03
1	0.115E+02

Min = 1.154680E+01
Max = 9.950364E+02

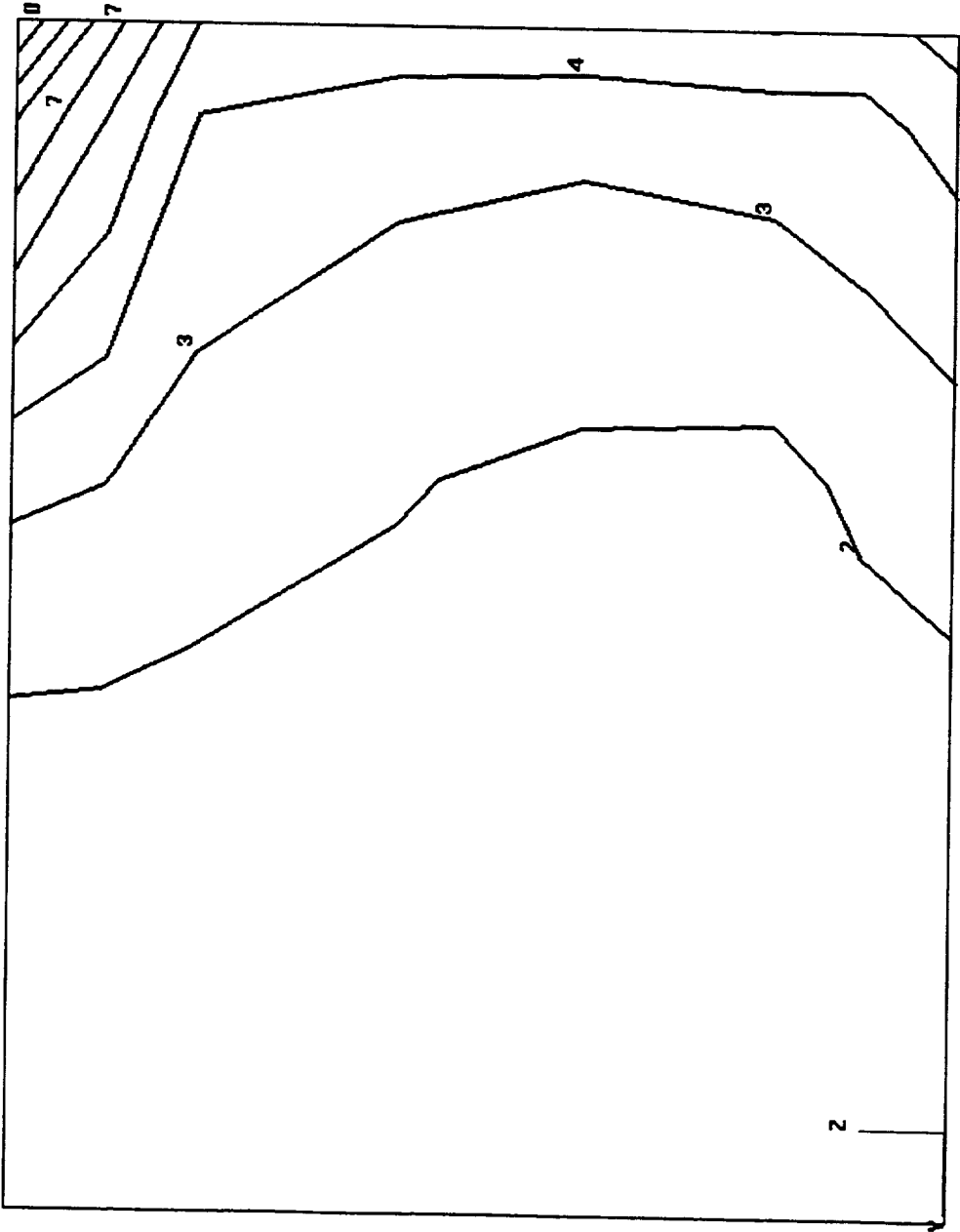
Min ID= 4728
Max ID= 4702

Contour_5:

Stress Tensor

Von Mises
At Z1

Design_0y=-20.6_0z=19.6
Static Subcase



Time: 06:01:41
Date: 03/01/96

Metsat AMSU-A1 Lower Card Cage Card

Contour
Node Scalar1

Color Index

—	0	0.829E+03
—	9	0.738E+03
—	8	0.647E+03
—	7	0.556E+03
—	6	0.465E+03
—	5	0.374E+03
—	4	0.283E+03
—	3	0.192E+03
—	2	0.101E+03
—	1	0.992E+01

M1n = 9.920838E+00

Max = 9.205132E+02

M1n ID= 4723

Max ID= 4702

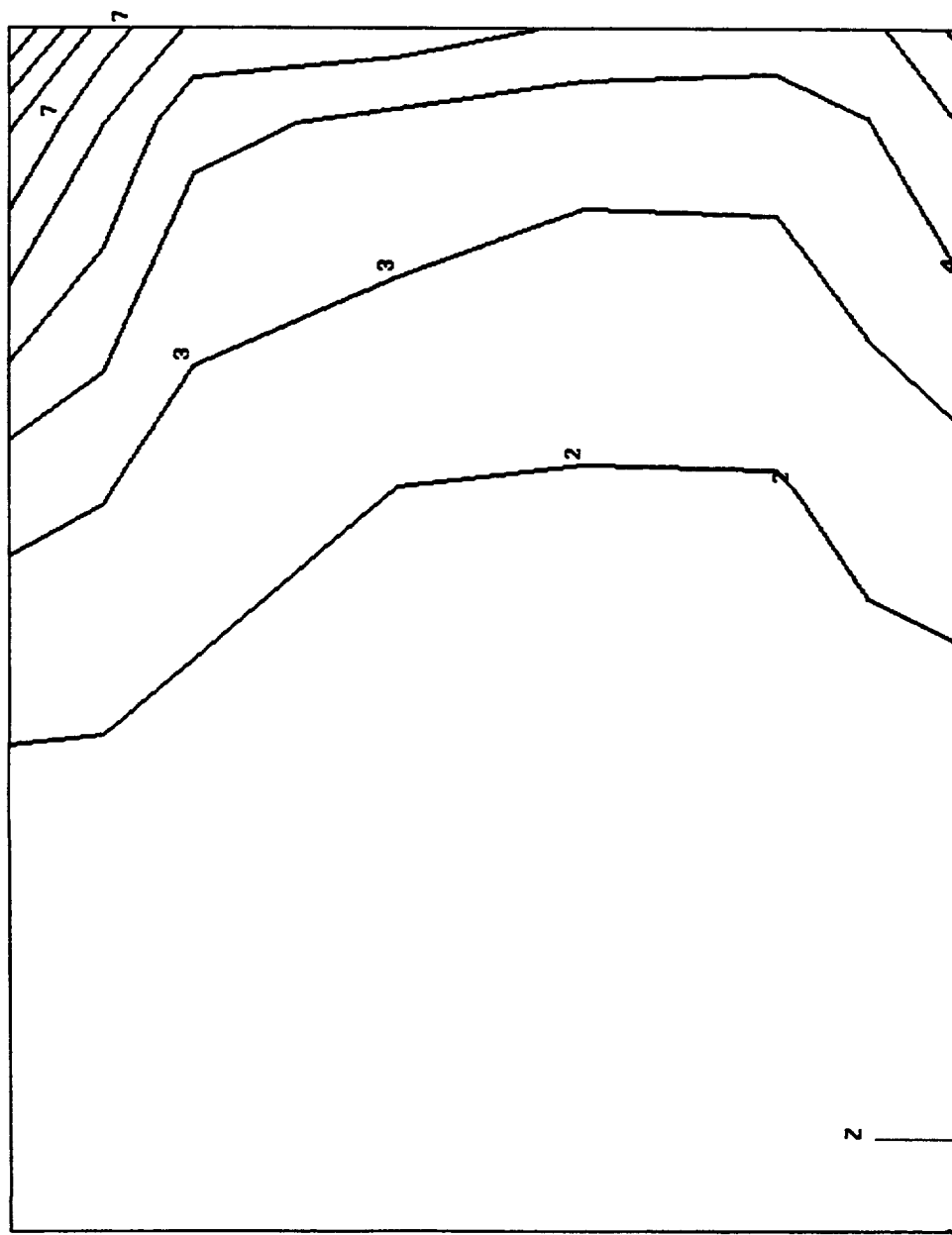
Contour_6:

Stress Tensor

Von Mises

At Z2

Design_Oy=-20.6_0z=19.6
Static Subcase



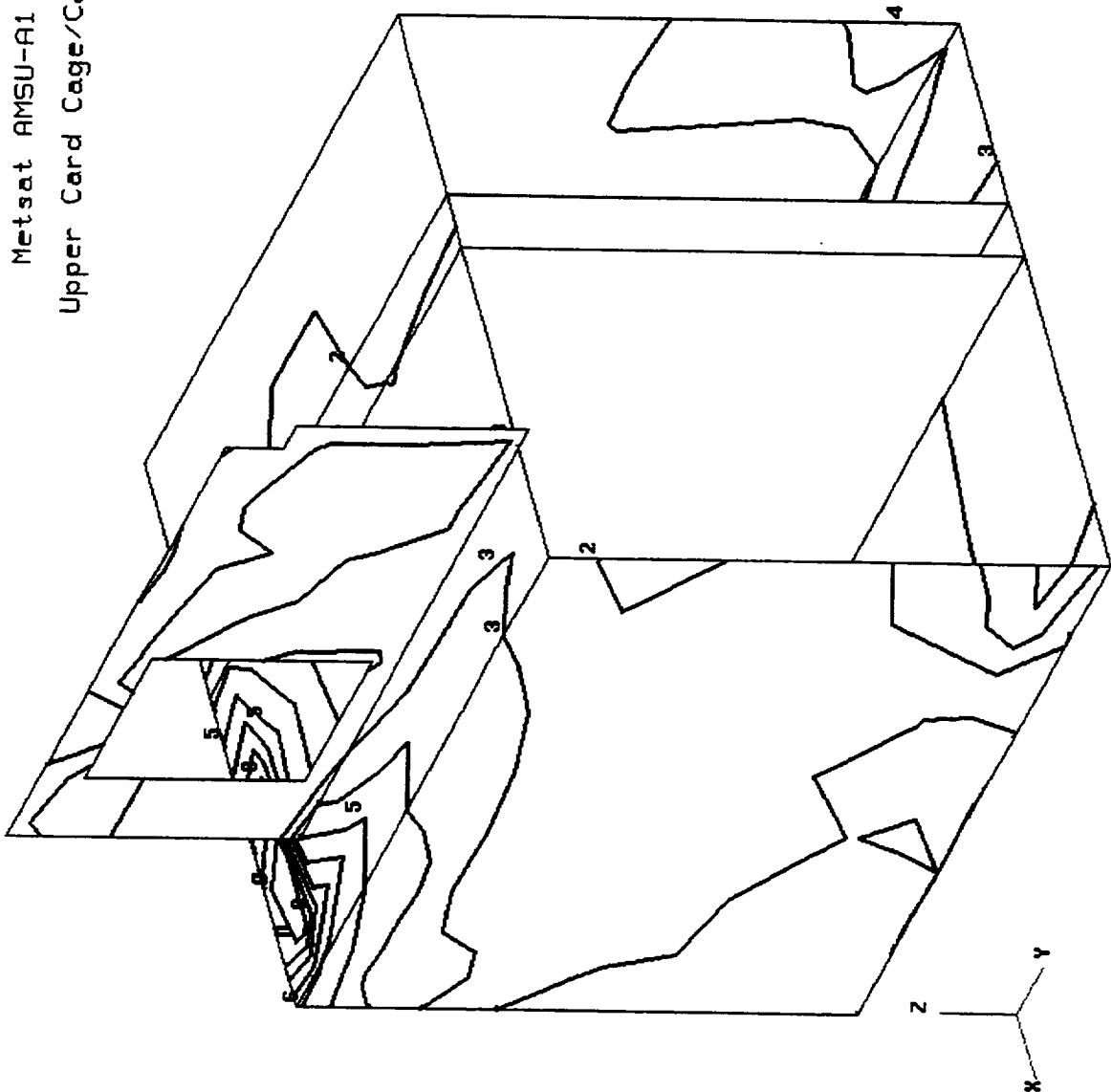
Metsat AMSU-A1
Upper Card Cage/Cards

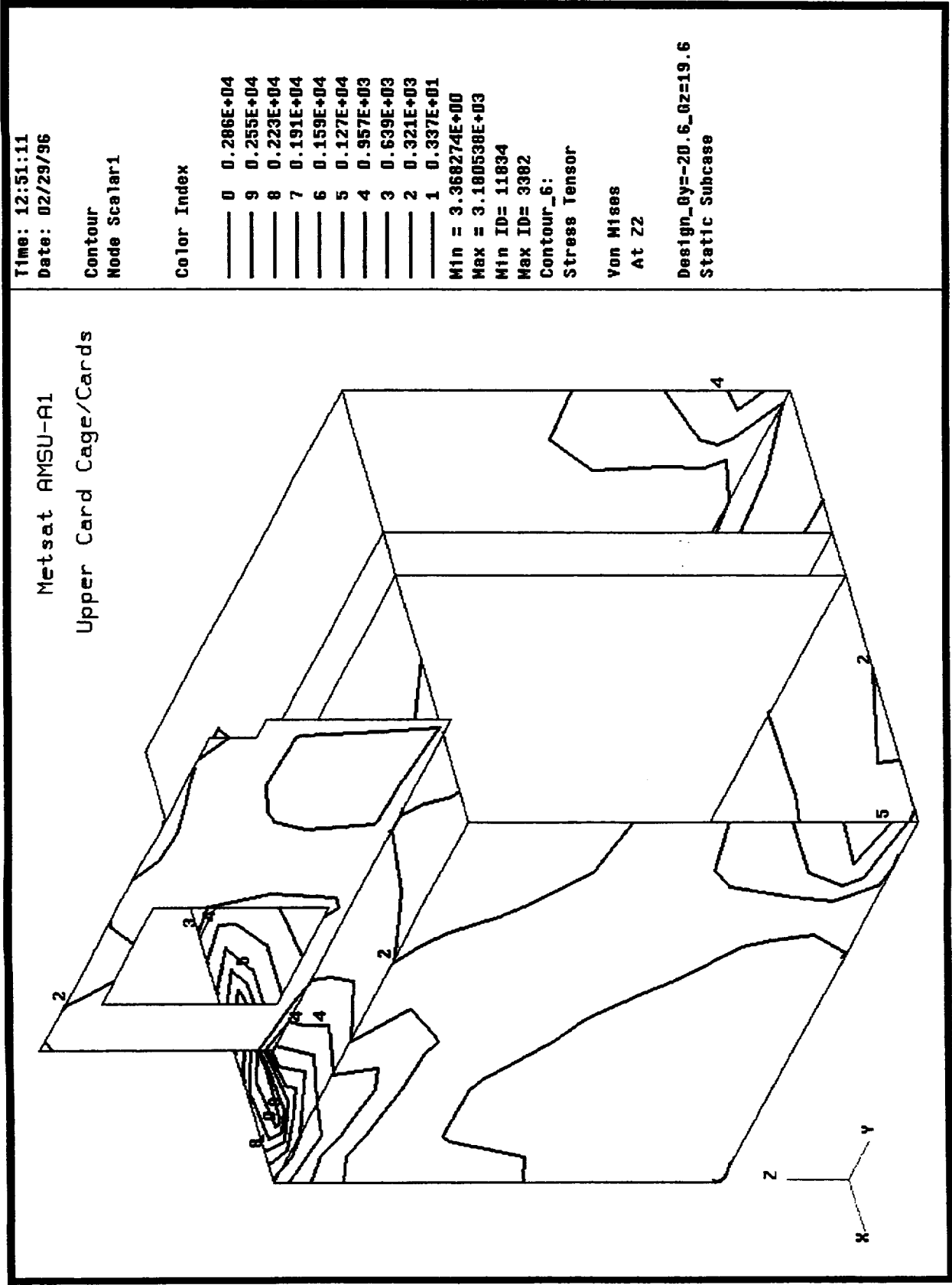
Time: 13:20:41
Date: 02/29/96

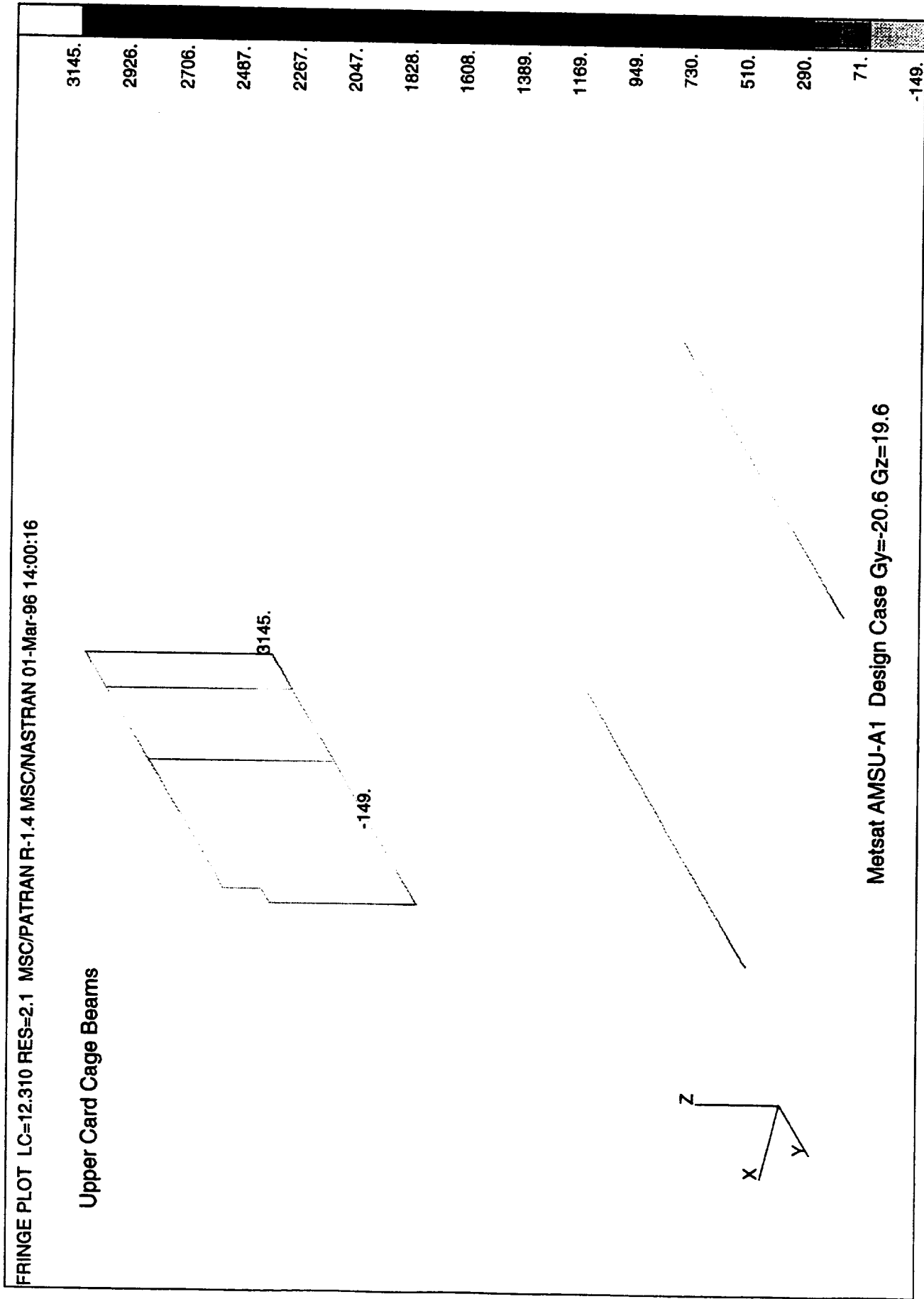
Contour
Node Scalar1

Color Index	
0	0.270E+04
9	0.240E+04
8	0.210E+04
7	0.180E+04
6	0.150E+04
5	0.120E+04
4	0.903E+03
3	0.604E+03
2	0.304E+03
1	0.385E+01

Min = 3.847748E+00
Max = 3.002270E+03
Min ID= 11279
Max ID= 3382
Contour_5:
Stress Tensor
Von Mises
At Z1
Design_0y=-20.6_0z=19.6
Static Subcase

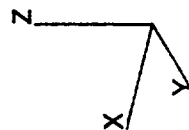
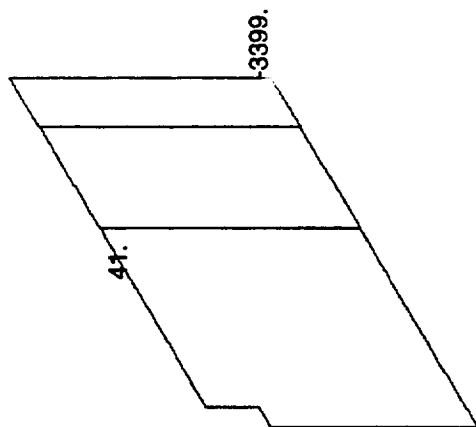






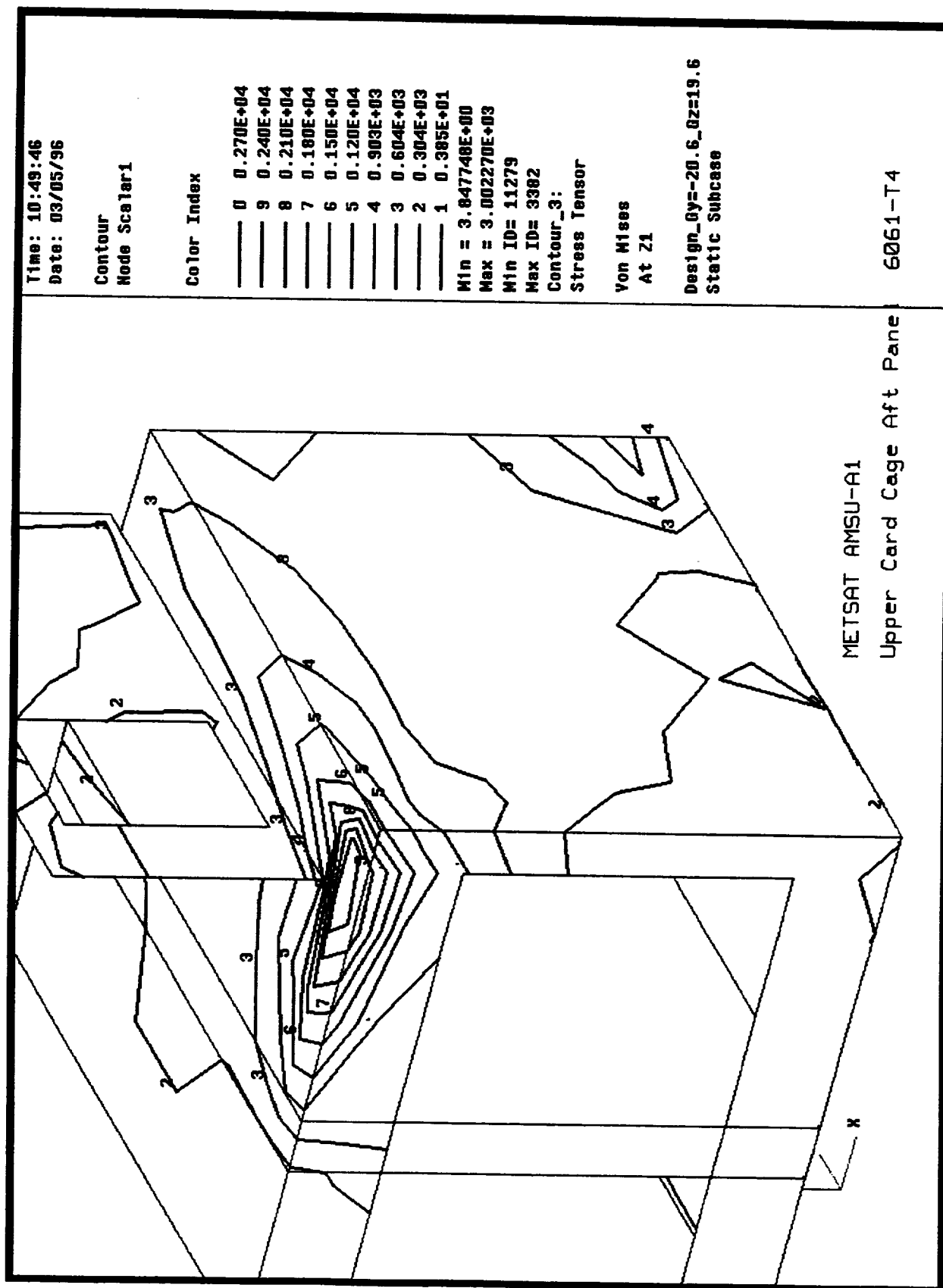
FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:00:22

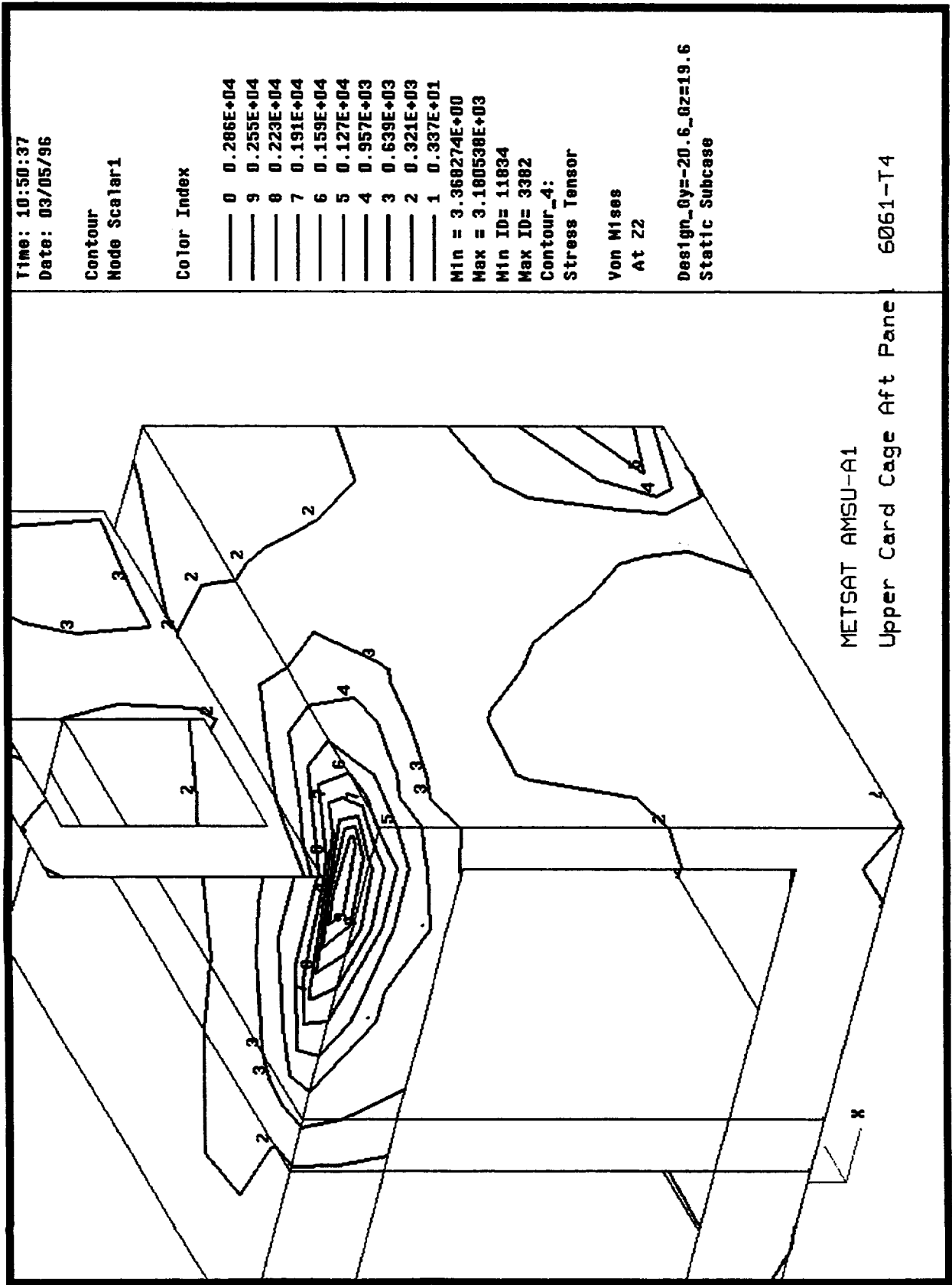
Upper Card Cage Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

41.
-188.
-417.
-647.
-876.
-1106.
-1335.
-1564.
-1794.
-2023.
-2252.
-2482.
-2711.
-2940.
-3170.
-3399.

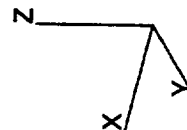




FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:11:16

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL

BEAM ELEMENTS



263.

2908.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

2908.

2731.

2555.

2379.

2202.

2026.

1850.

1673.

1497.

1321.

1144.

968.

792.

615.

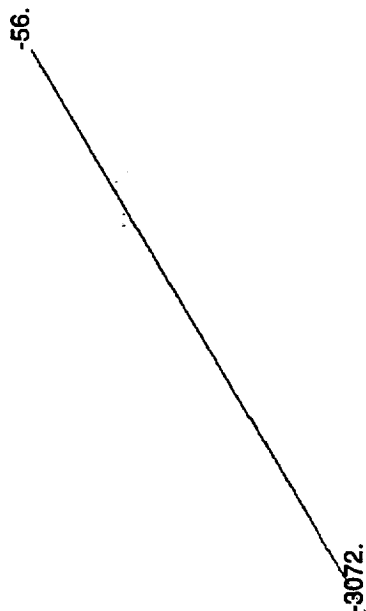
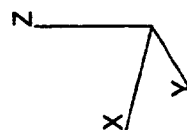
439.

263.

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 05-Mar-96 11:11:09

METSAT AMSU-A1 1331162-7 UPPER CARD CAGE 6061-T4 AFT PANEL

BEAM ELEMENTS



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

-56.
-257.
-458.
-659.
-860.
-1061.
-1262.
-1463.
-1664.
-1865.
-2067.
-2268.
-2469.
-2670.
-2871.
-3072.

Metsat AMSU-A1 Upper Card

Time: 15:50:23
Date: 02/29/96

Contour
Node Scalar1

Color	Index
—	0 0.156E+03
—	9 0.139E+03
—	8 0.122E+03
—	7 0.105E+03
—	6 0.885E+02
—	5 0.716E+02
—	4 0.546E+02
—	3 0.377E+02
—	2 0.208E+02
—	1 0.385E+01

Min = 3.847748E+00
Max = 1.731636E+02

Min ID= 11279

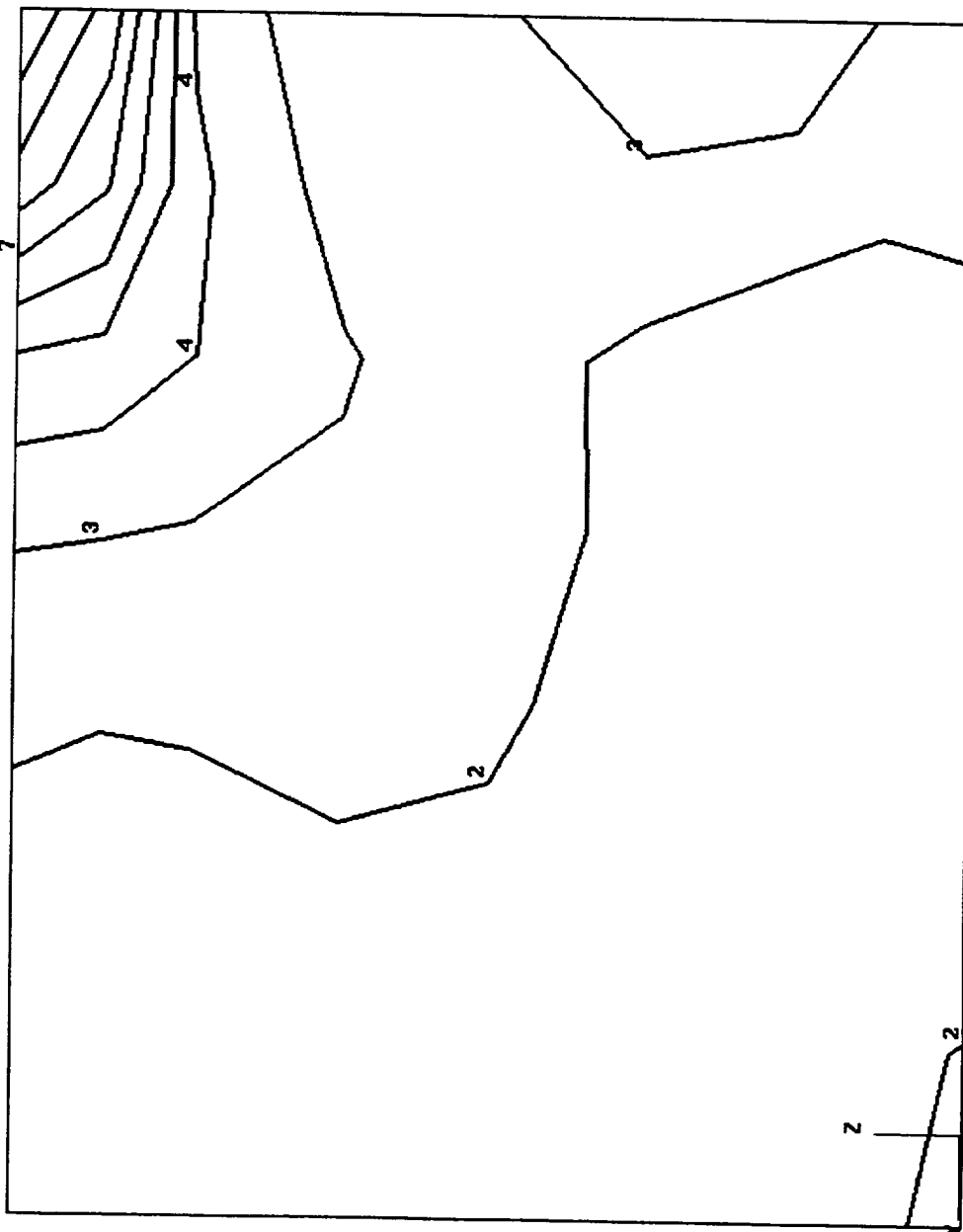
Max ID= 11339

Contour_5:

Stress Tensor

Von Mises
At Z1

Design_Oy=-20.6_Gz=19.6
Static Subcase



Metsat AMSU-A1 Upper Card

Time: 15:53:41
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.153E+03
—	9	0.136E+03
—	8	0.120E+03
—	7	0.103E+03
—	6	0.869E+02
—	5	0.704E+02
—	4	0.539E+02
—	3	0.374E+02
—	2	0.209E+02
—	1	0.436E+01

Min = 4.359285E+00

Max = 1.695095E+02

Min ID= 11308

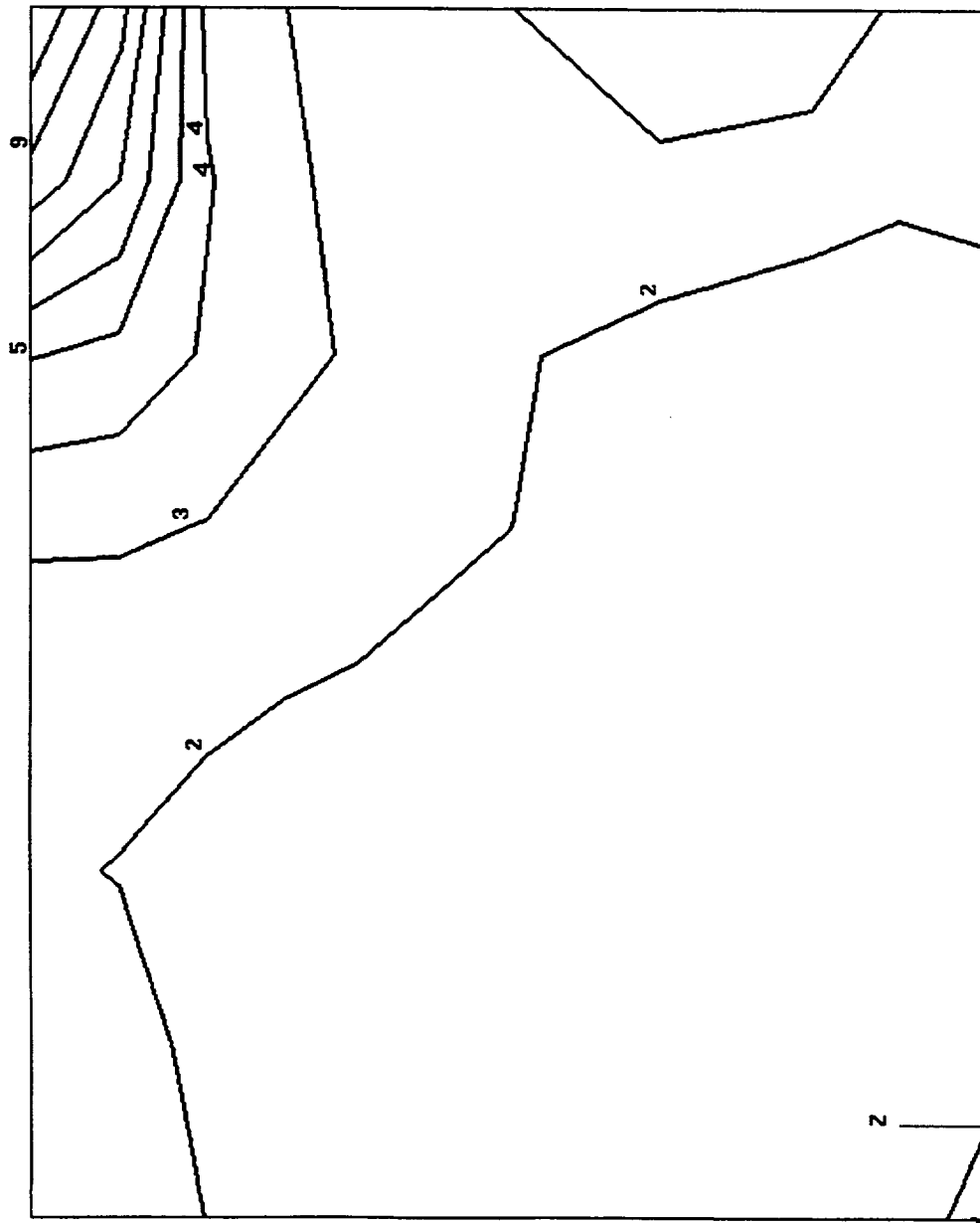
Max ID= 11339

Contour_6:

Stress Tensor

Von Mises
At 22

Design_0y=-20.6_0z=19.6
Static Subcase



Metsat AMSU-A1

Lower Warmload w/Supports

Time: 09:54:20
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.140E+04
9	0.124E+04
8	0.109E+04
7	0.941E+03
6	0.790E+03
5	0.639E+03
4	0.487E+03
3	0.336E+03
2	0.185E+03
1	0.336E+02

Min = 3.361425E+01

Max = 1.546489E+03

Min ID= 4923

Max ID= 3030

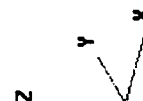
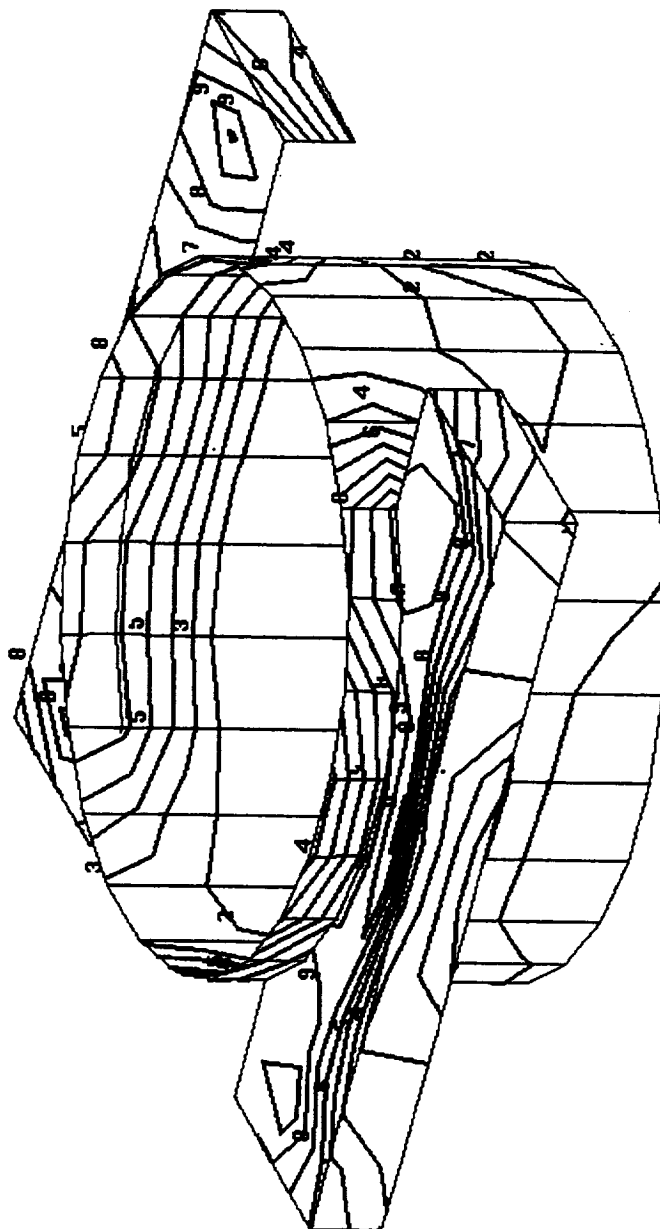
Contour_5:

Stress Tensor

Von Mises

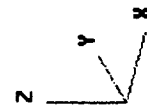
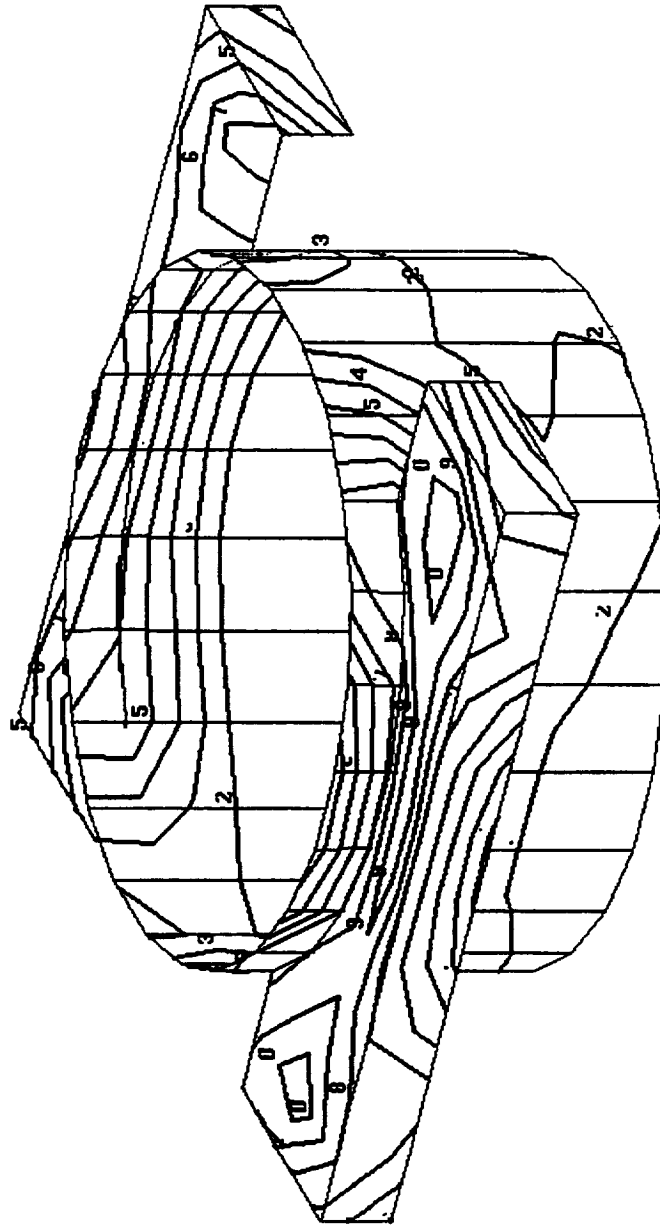
At 21

Design_0y=-20.6_0z=19.6
Static Subcase



Metsat AMSU-A1

Lower Warmload w/Supports



Time: 09:54:50
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.163E+04
—	9	0.145E+04
—	8	0.127E+04
—	7	0.110E+04
—	6	0.918E+03
—	5	0.741E+03
—	4	0.563E+03
—	3	0.385E+03
—	2	0.208E+03
—	1	0.301E+02

Min = 3.010017E+01
Max = 1.806379E+03

Min ID= 4918

Max ID= 3030

Contour_6:

Stress Tensor

Von Mises
At 22

Design_By=-20.6_0z=19.6
Static Subcase

Metsat AMSU-A1

Upper Warmload w/Supports

Time: 09:50:55
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.165E+04
9	0.147E+04
8	0.129E+04
7	0.111E+04
6	0.932E+03
5	0.751E+03
4	0.571E+03
3	0.390E+03
2	0.209E+03
1	0.289E+02

Min = 2.880125E+01

Max = 1.835060E+03

Min ID= 5228

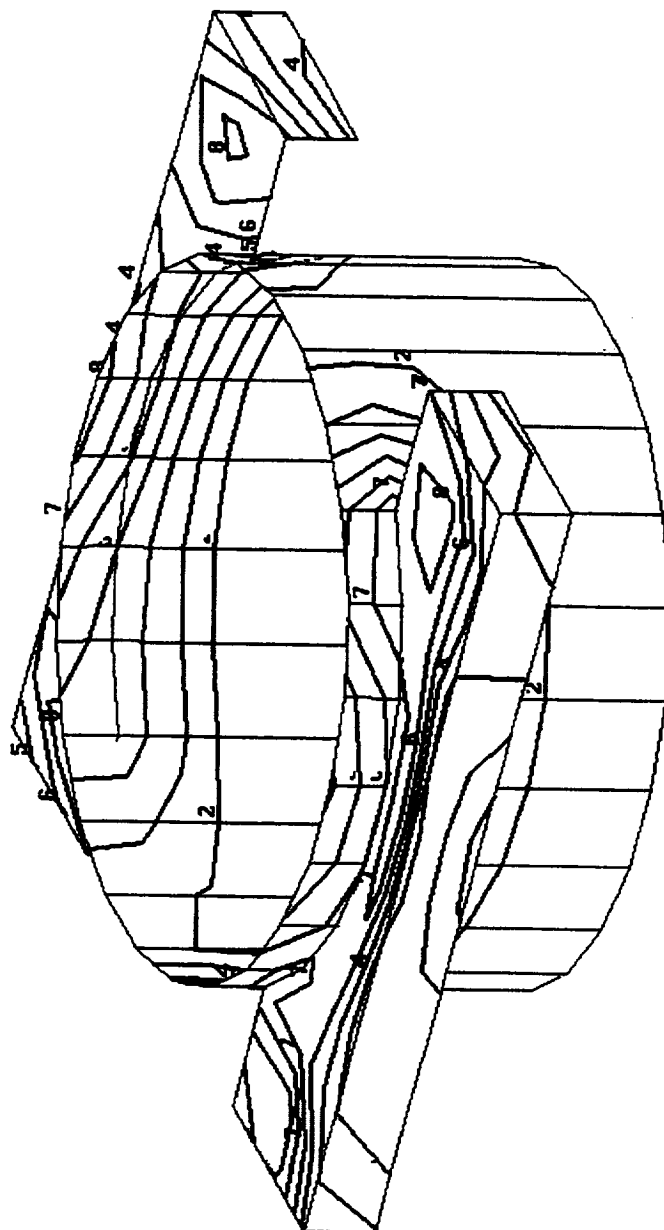
Max ID= 2741

Contour_5:

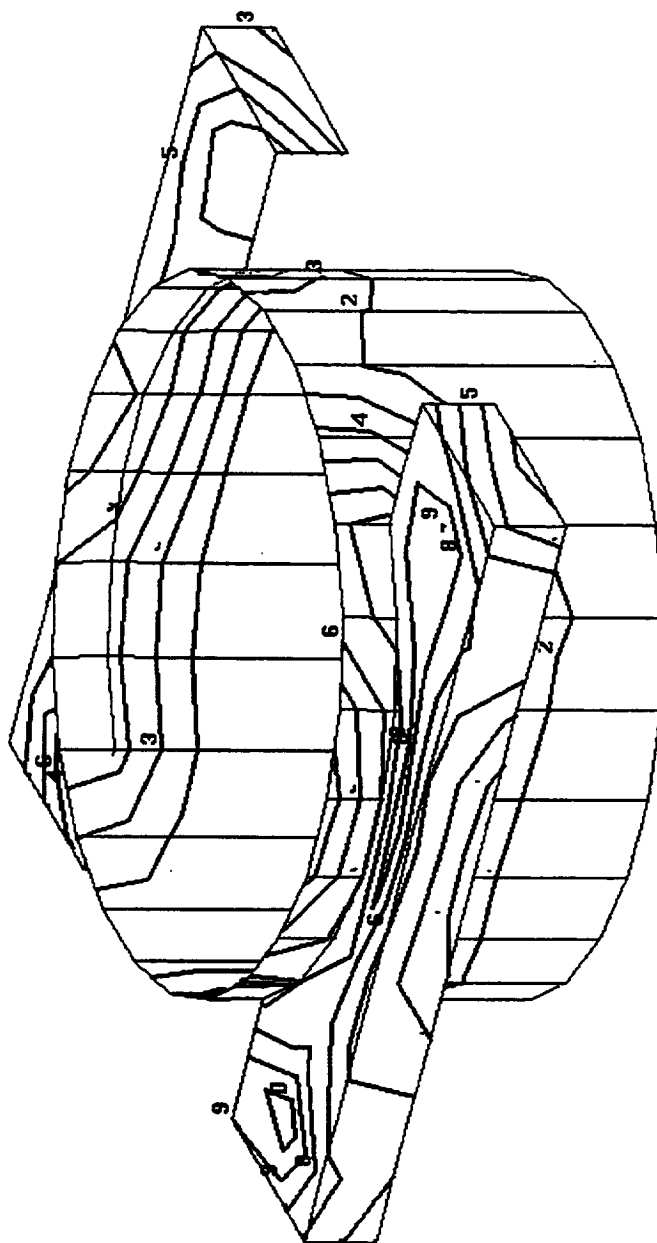
Stress Tensor

Von Mises
At Z1

Design_Oy=-20.6_Oz=19.6
Static Subcase



Metsat AMSU-A1
Upper Warmload w/Supports



Time: 09:51:21
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.176E+04
9	0.157E+04
8	0.138E+04
7	0.119E+04
6	0.993E+03
5	0.800E+03
4	0.607E+03
3	0.414E+03
2	0.221E+03
1	0.283E+02

Min = 2.833657E+01

Max = 1.957660E+03

Min ID= 5223

Max ID= 2991

Contour_6:

Stress Tensor

Von Mises

At Z2

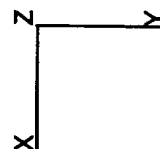
Design_0y=-20.6_0z=19.6
Static Subcase

FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:10:18

Beam Support 1331406-1 Beams

1950.
1836.
1722.
1608.
1494.
1380.
1265.
1151.
1037.
923.
809.
695.
581.
467.
353.
239.

239. 1950.



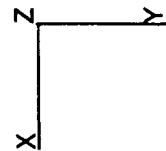
Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 11:10:30

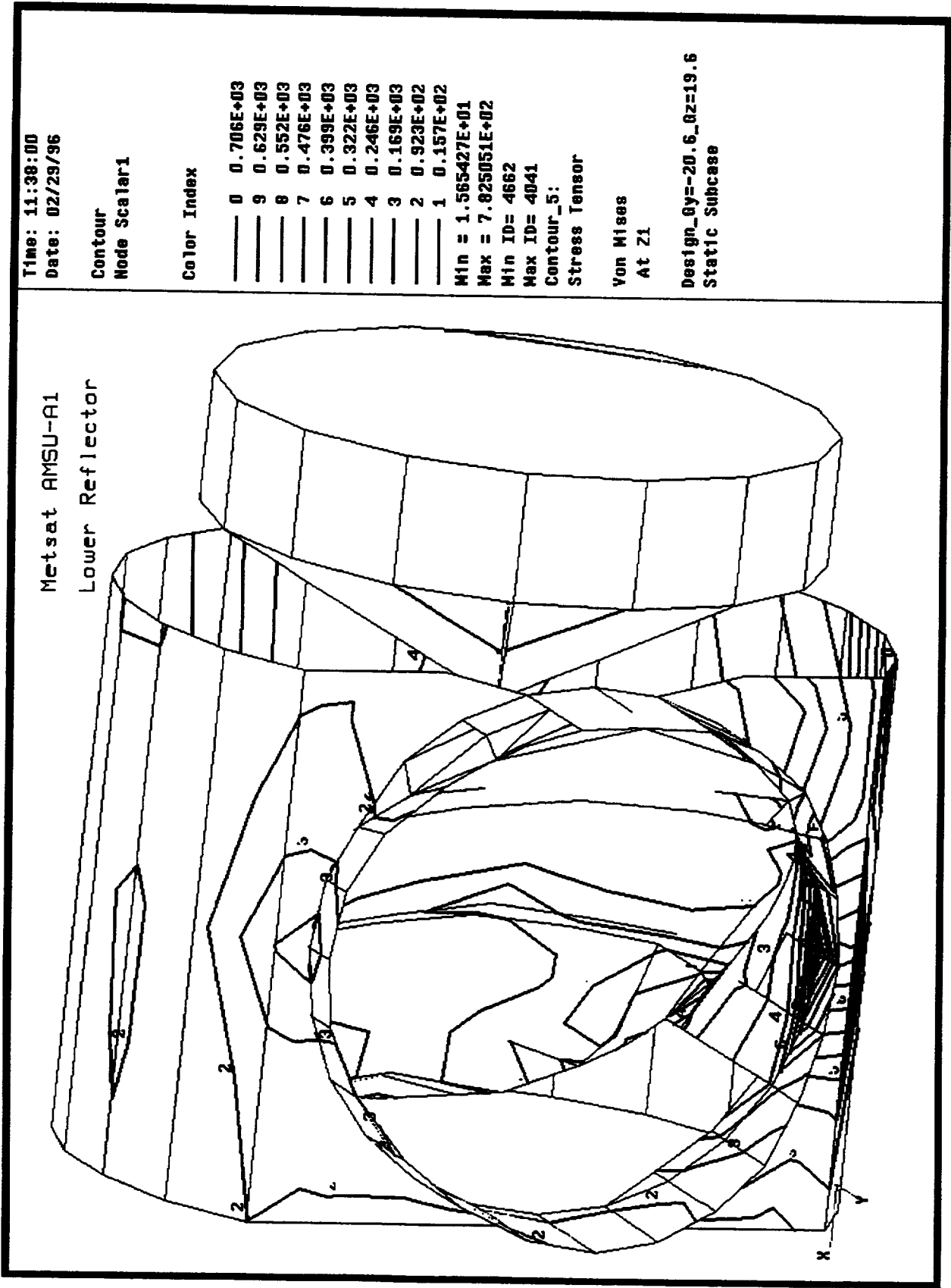
Beam Support 1331406-1 Beams

22.
-54.
-130.
-206.
-282.
-358.
-434.
-510.
-587.
-663.
-739.
-815.
-891.
-967.
-1043.
-1119.

-1119. 22.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6



Time: 11:43:31
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.708E+03
9	0.630E+03
8	0.553E+03
7	0.476E+03
6	0.399E+03
5	0.322E+03
4	0.245E+03
3	0.168E+03
2	0.909E+02
1	0.138E+02

Min = 1.380528E+01
Max = 7.846122E+02

Min ID= 4011

Max ID= 4041

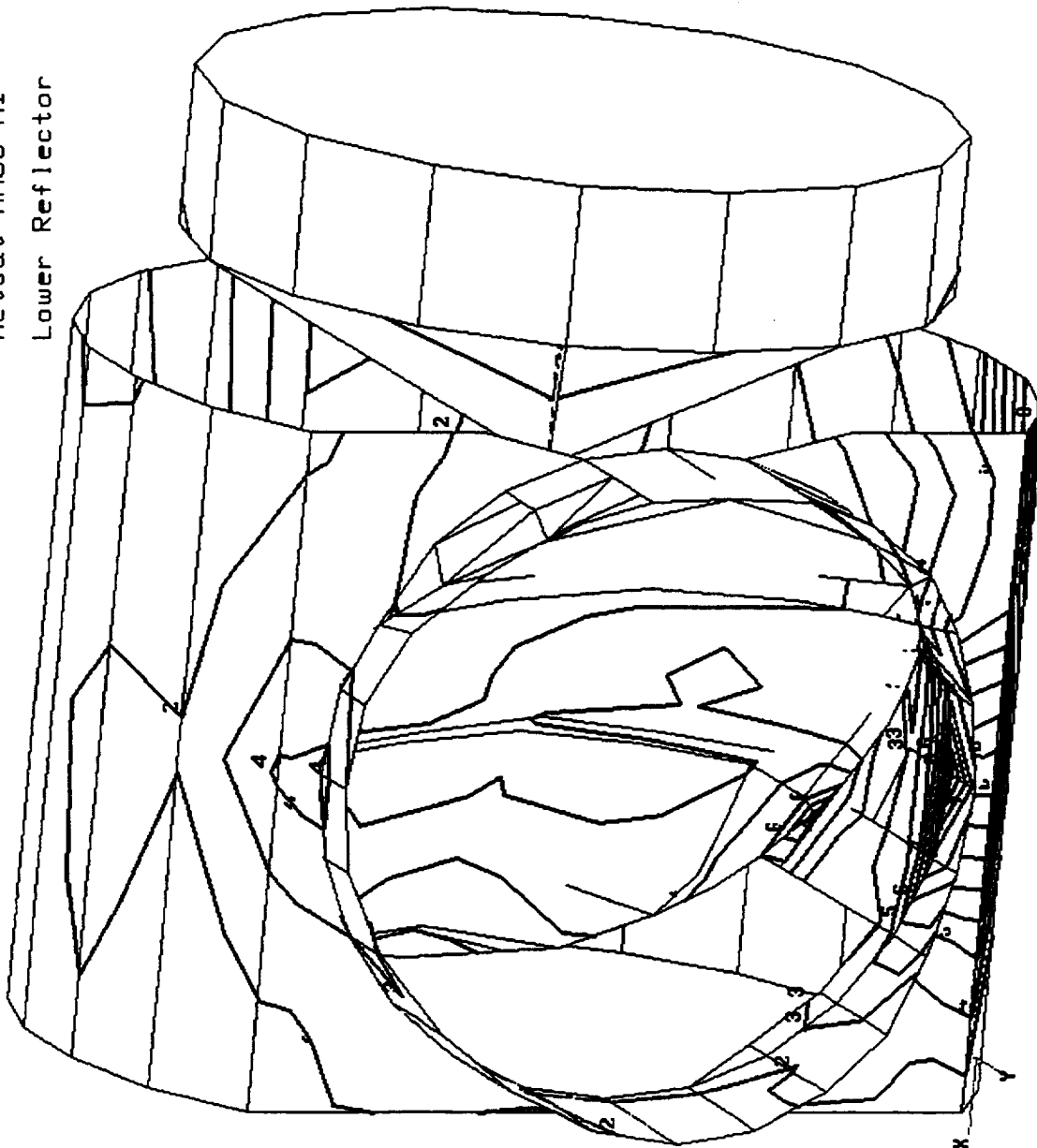
Contour_6:

Stress Tensor

Von Mises
At 22

Design_Gy=-20.6_Oz=19.6
Static Subcase

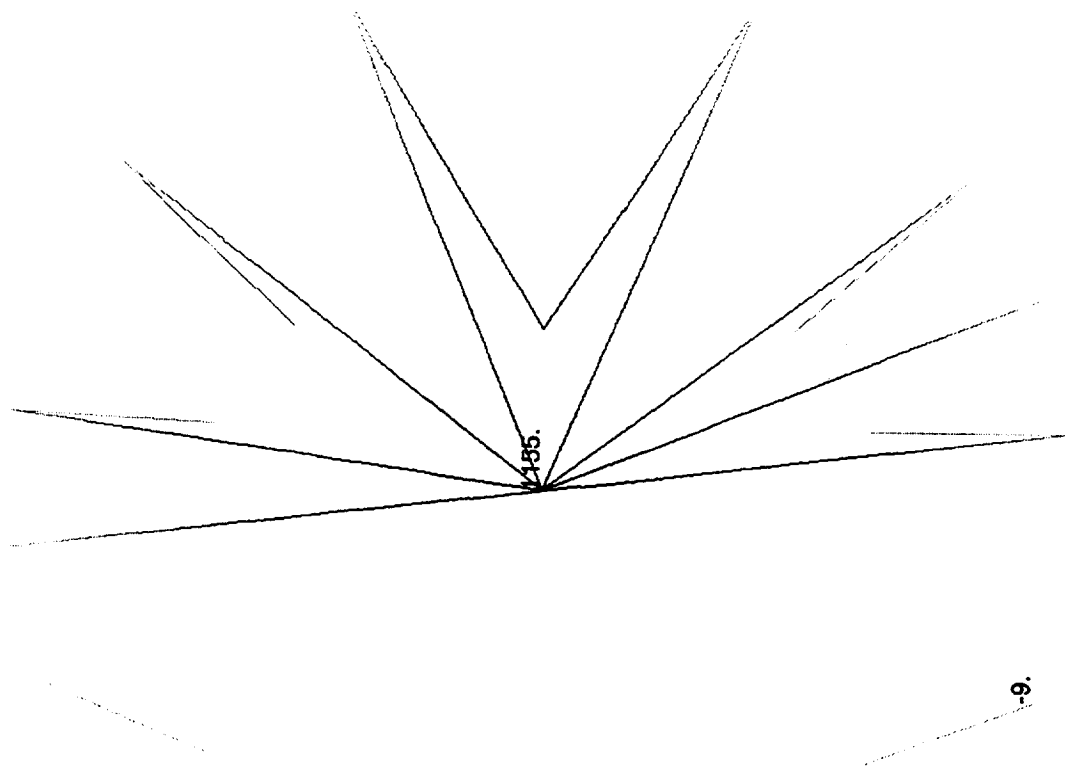
Metsat AMSU-A1
Lower Reflector



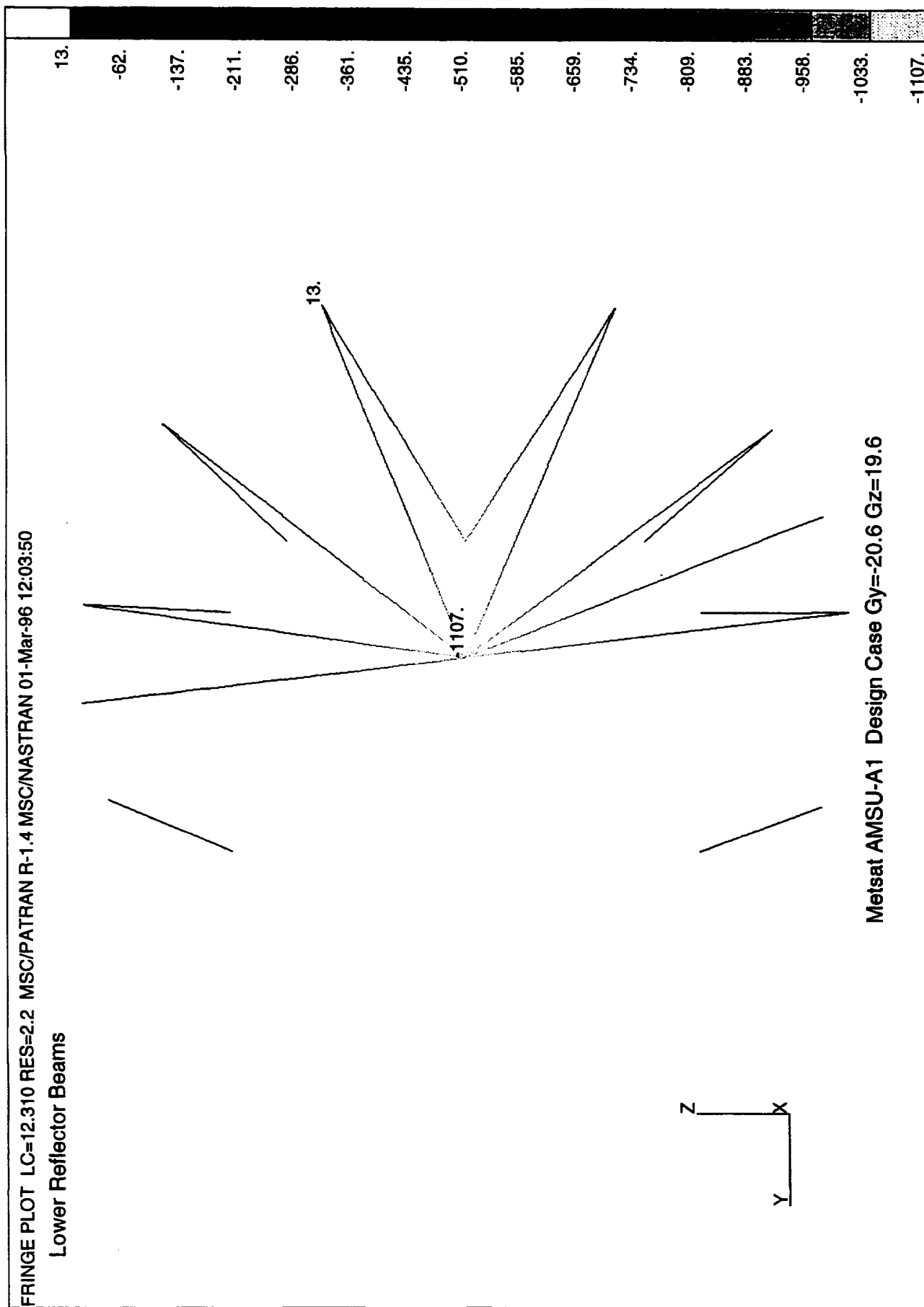
FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 12:03:42

Lower Reflector Beams

1155.
1077.
1000.
922.
845.
767.
689.
612.
534.
457.
379.
301.
224.
146.
69.
-9.

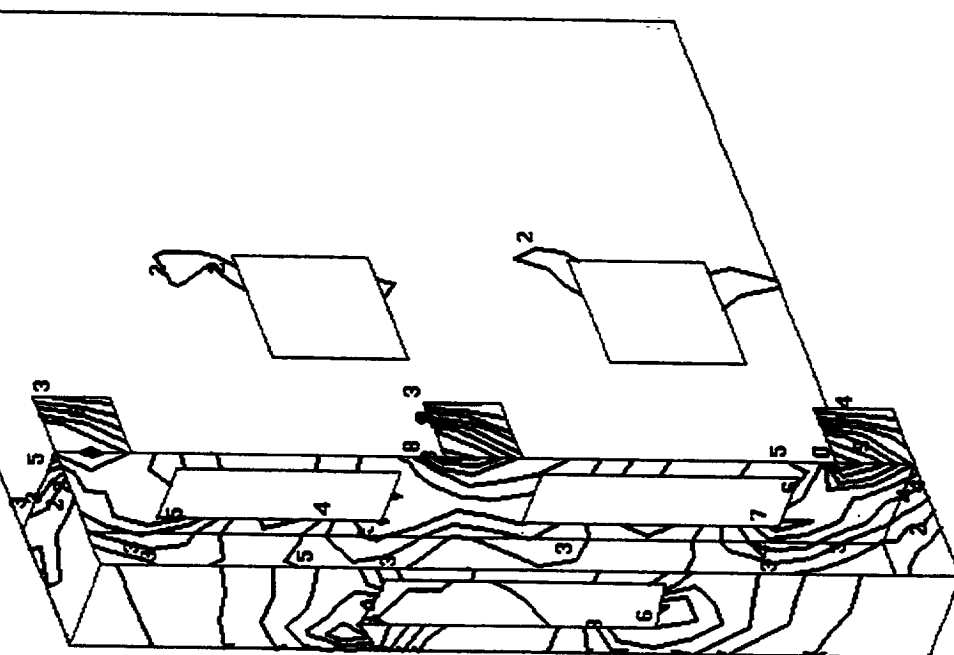


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6



Metsat AMSU-A1

Power/Control Monitor



Time: 13:24:11
Date: 02/29/96

Contour
Node Scalar1

Color Index	
0	0.791E+03
9	0.704E+03
8	0.616E+03
7	0.529E+03
6	0.441E+03
5	0.354E+03
4	0.266E+03
3	0.179E+03
2	0.911E+02
1	0.360E+01

Min = 3.596521E+00

Max = 8.790309E+02

Min ID= 5618

Max ID= 6333

Contour_5:

Stress Tensor

Von Mises
At 21

Design_Qy=-20.6_Qz=19.6
Static Subcase

Time: 13:26:35
Date: 02/29/96

Metsat AMSU-A1

Power/Control Monitor

Contour
Node Scalar1

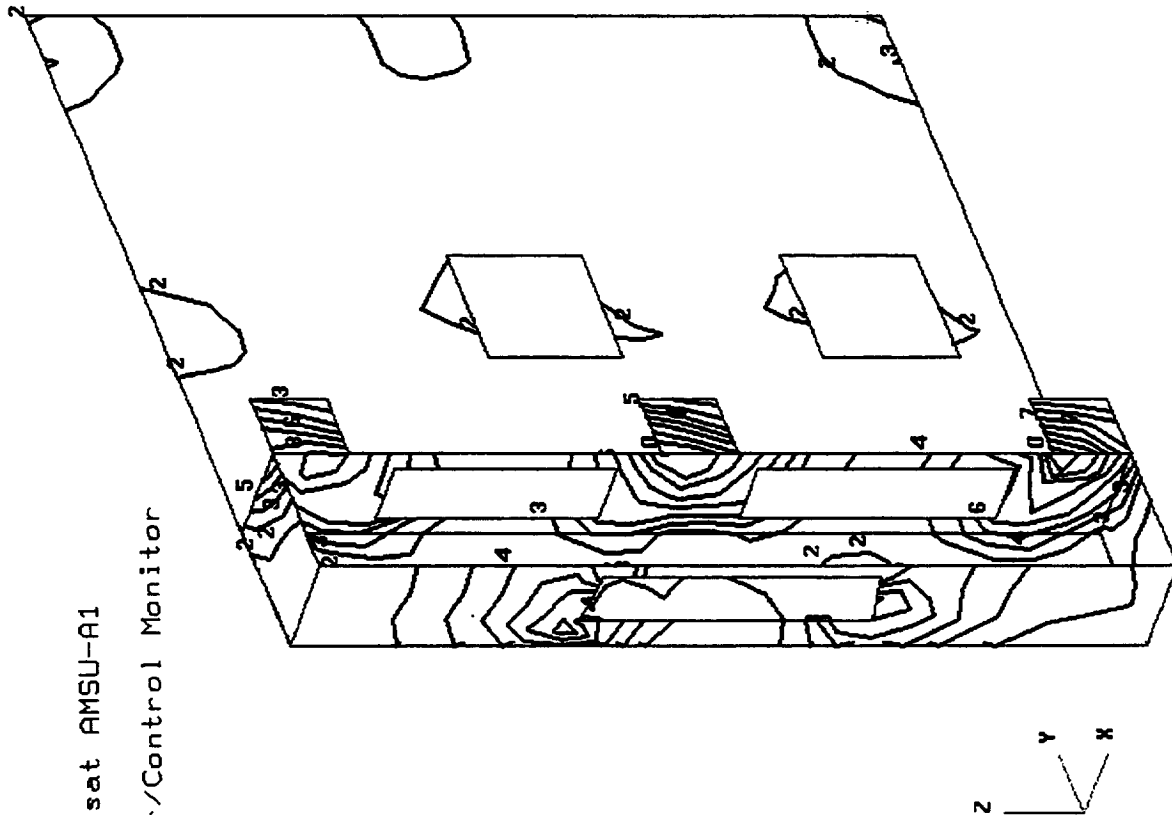
Color Index

0	0.817E+03
9	0.727E+03
8	0.637E+03
7	0.546E+03
6	0.456E+03
5	0.365E+03
4	0.275E+03
3	0.184E+03
2	0.935E+02
1	0.304E+01

Min = 3.042626E+00
Max = 9.079841E+02
Min ID= 5610
Max ID= 6333
Contour_6:
Stress Tensor

Von Mises
At 22

Design_Gy=-20.6_Gz=19.6
Static Subcase



Time: 11:22:18
Date: 03/05/96

Contour
Node Scalar1

Color Index

0	0.108E+03
1	0.967E+02
2	0.850E+02
3	0.734E+02
4	0.610E+02
5	0.501E+02
6	0.385E+02
7	0.269E+02
8	0.152E+02
9	0.360E+01

Min = 3.596521E+00
Max = 1.199156E+02

Min ID= 5618

Max ID= 6042

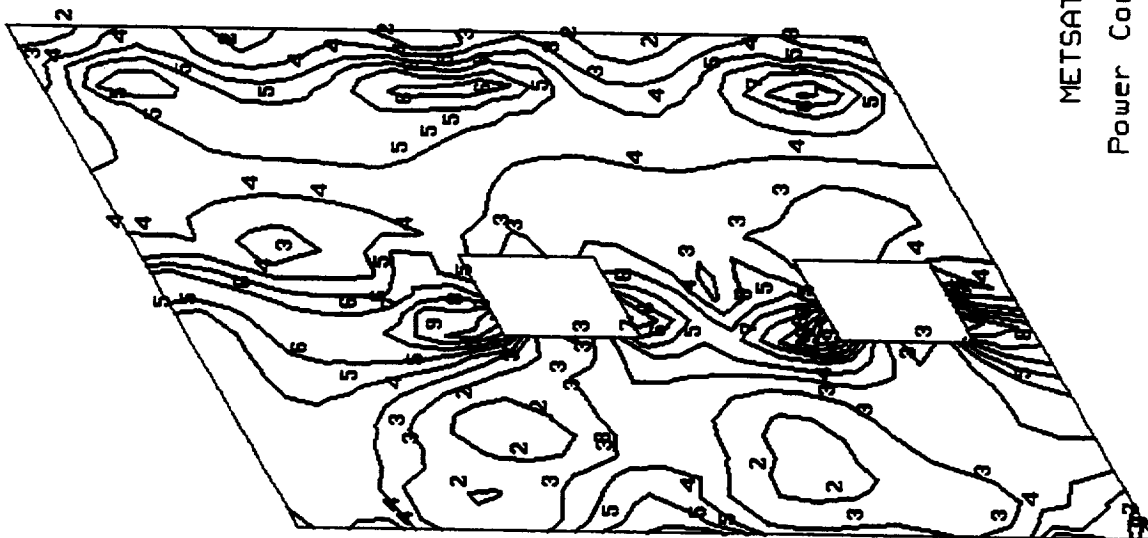
Contour_3:

Stress Tensor

Von Mises

At Z1

Design_By=-20.6_0z=19.6
Static Subcase



METSAT AMSU-A1
Power Control/Monitor PWB

Time: 11:21:52
Date: 03/05/96

Contour
Node Scalar1

Color Index

0	0.174E+03
9	0.155E+03
8	0.136E+03
7	0.117E+03
6	0.978E+02
5	0.789E+02
4	0.599E+02
3	0.410E+02
2	0.220E+02
1	0.304E+01

Min = 3.042626E+00

Max = 1.925876E+02

Min ID= 5610

Max ID= 6240

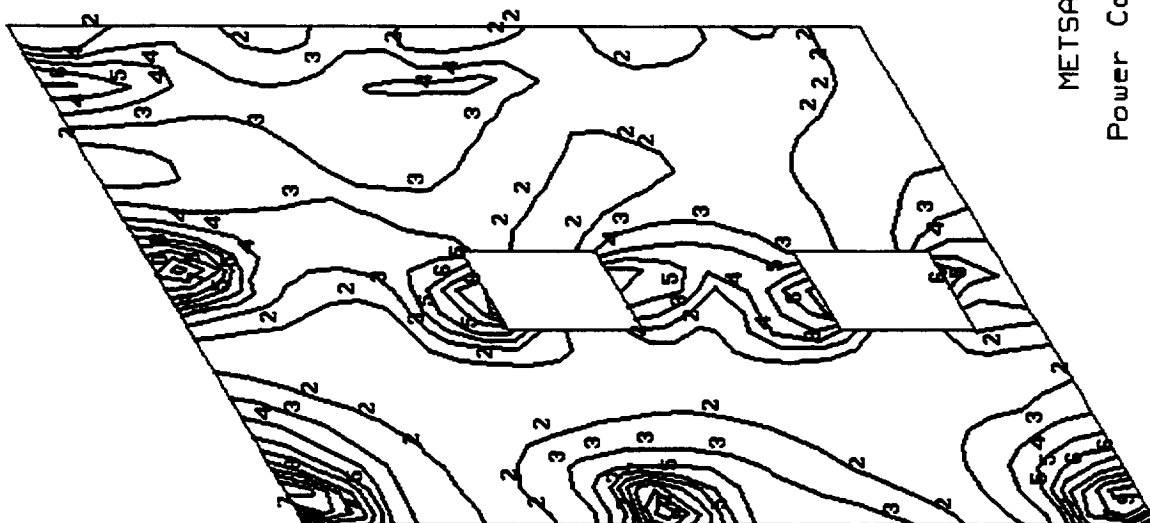
Contour_4:

Stress Tensor

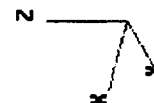
Von Mises

At 22

Design_Oy=-20.6_Oz=19.6
Static Subcase



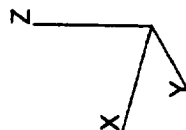
METSAT AMSU-A1
Power Control/Monitor PWB



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:11:09

Power Control/Module Standoff Beams

2998.
2801.
2604.
2407.
2210.
2013.
1816.
1619.
1422.
1225.
1028.
831.
634.
437.
240.
43.

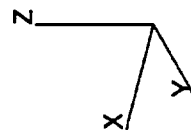


43.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 13:11:15

Power Control/Module Standoff Beams



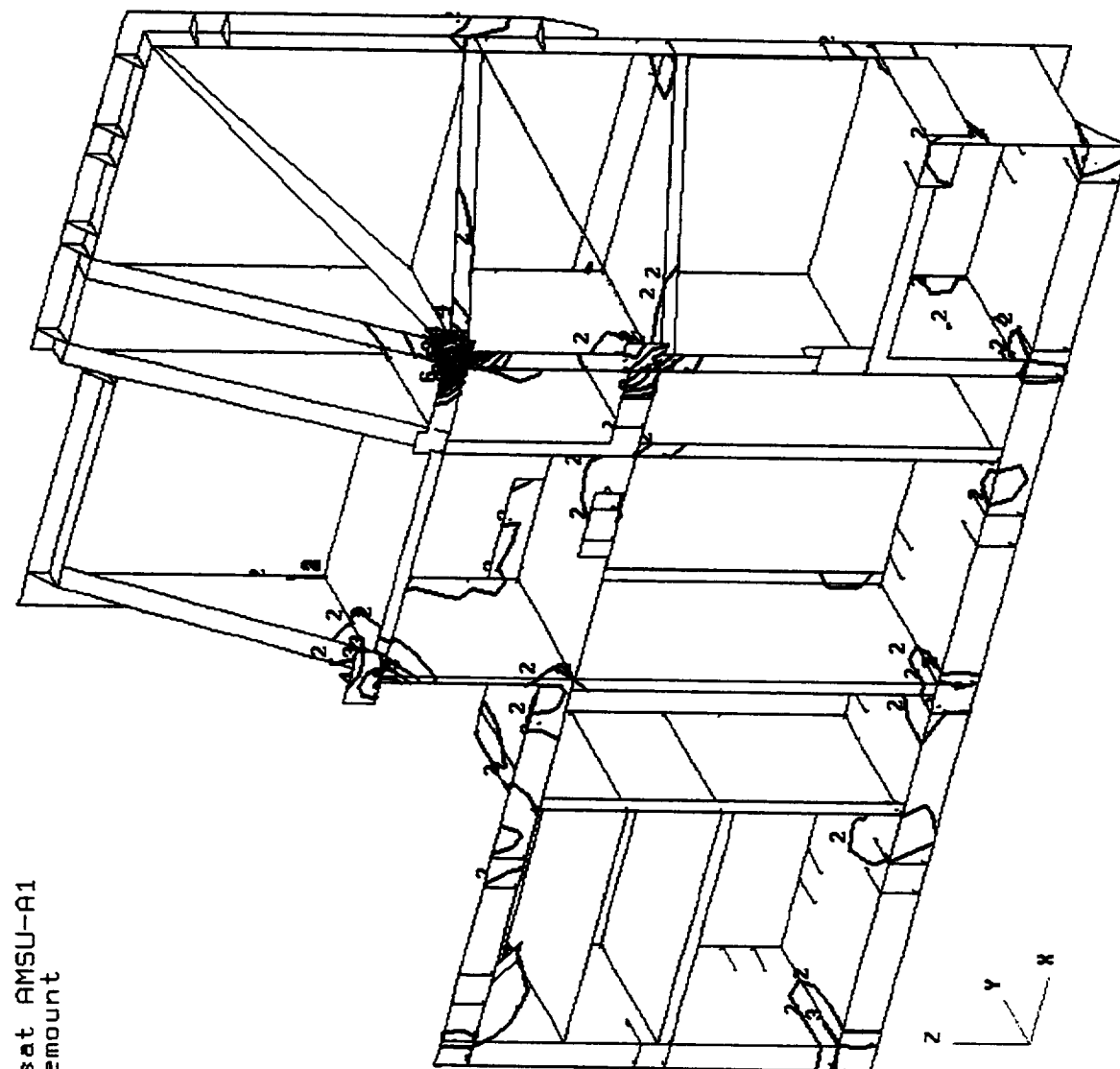
-41.
-238.
-435.
-632.
-829.
-1026.
-1223.
-1420.
-1617.
-1814.
-2011.
-2208.
-2405.
-2602.
-2799.
-2996.

-2996.

-41.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

Metsat AMSU-A1
Sidemount



Time: 11:22:28
Date: 02/29/96

Contour
Node Scalar1

Color Index

0	0.200E+05
9	0.178E+05
8	0.156E+05
7	0.134E+05
6	0.111E+05
5	0.892E+04
4	0.670E+04
3	0.448E+04
2	0.226E+04
1	0.396E+02

Min = 3.960511E+01

Max = 2.223403E+04

Min ID= 8146

Max ID= 8312

Contour_5:

Stress Tensor

Von Mises

At Z1

Design_0y=-20.6_0z=19.6
Static Subcase

Time: 11:21:56
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.196E+05
—	9	0.174E+05
—	8	0.152E+05
—	7	0.131E+05
—	6	0.109E+05
—	5	0.873E+04
—	4	0.656E+04
—	3	0.439E+04
—	2	0.222E+04
—	1	0.443E+02

Min = 4.429981E+01

Max = 2.176423E+04

Min ID= 10029

Max ID= 8308

Contour_6:

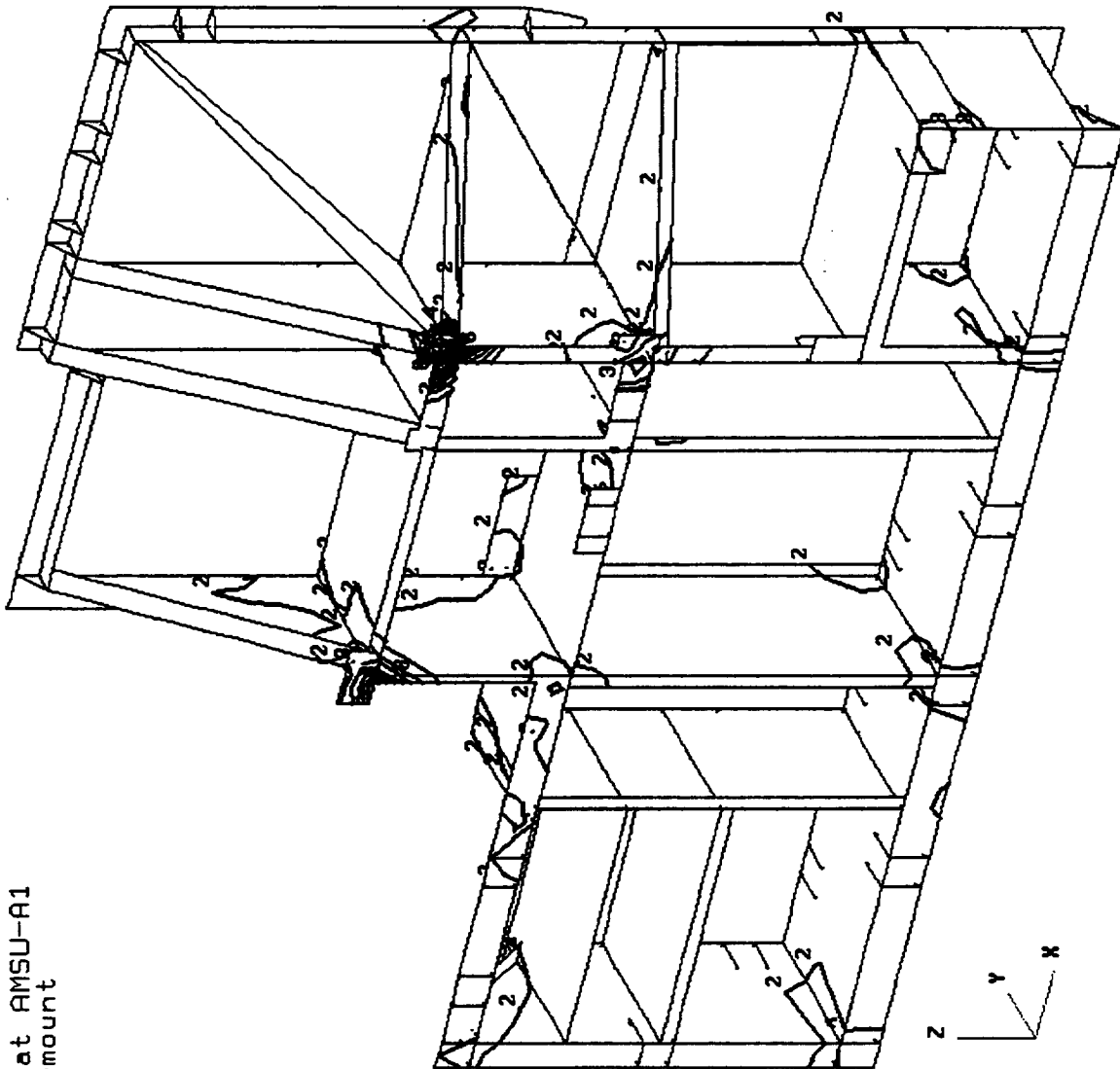
Stress Tensor

Von Mises

At Z2

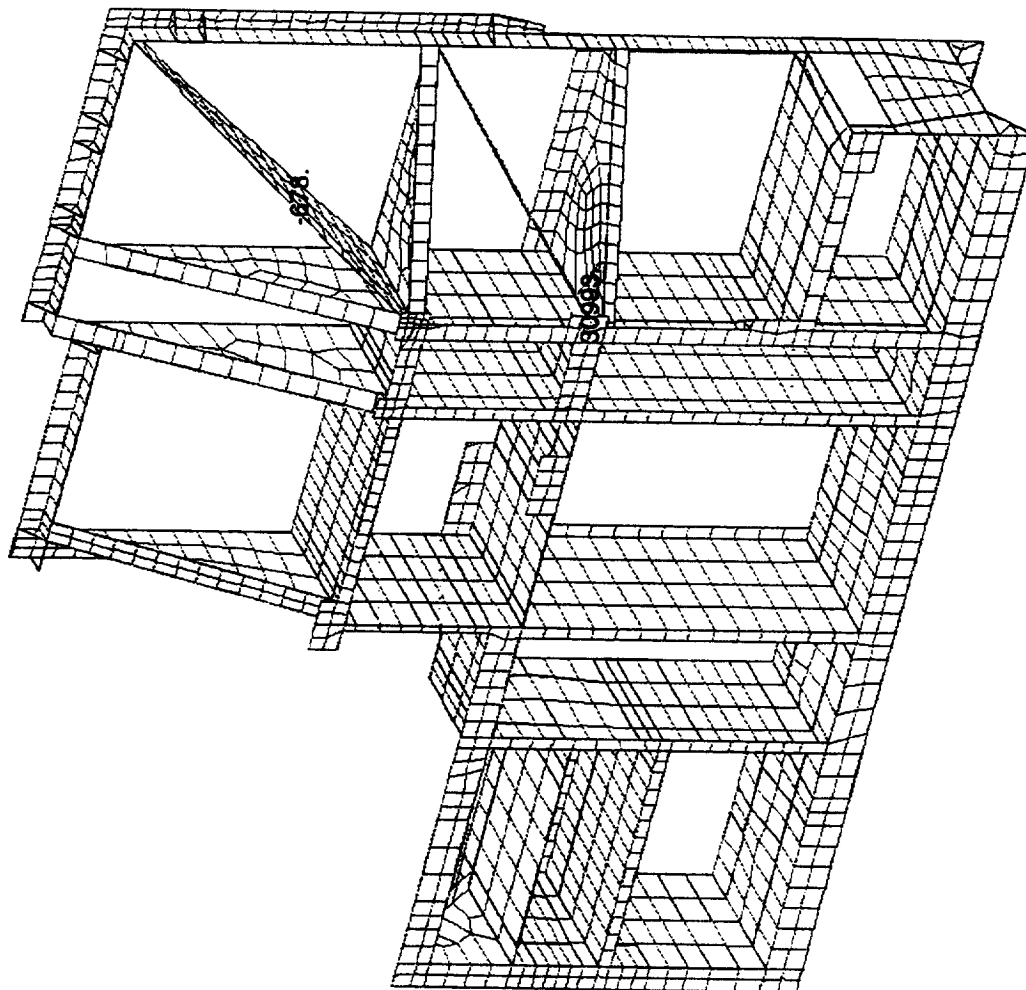
Design_Gy=-20.6_Gz=19.6
Static Subcase

Metsat AMSU-A1
Sidemount



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 08:40:54

Sidemount Beams

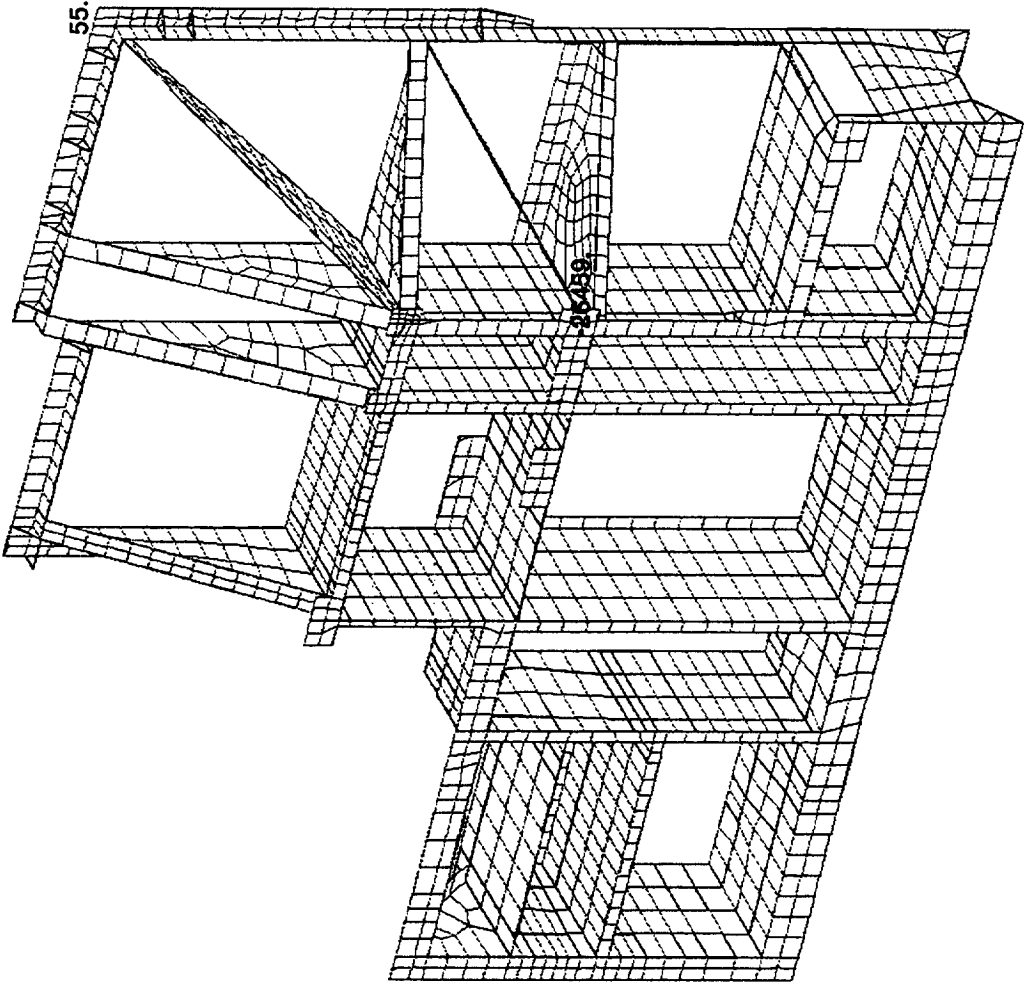


Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

30993.	28882.	26770.	24659.	22548.	20436.	18325.	16213.	14102.	11991.	9879.	7768.	5656.	3545.	1433.	-678.
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	-------	-------	-------	-------	-------	-------

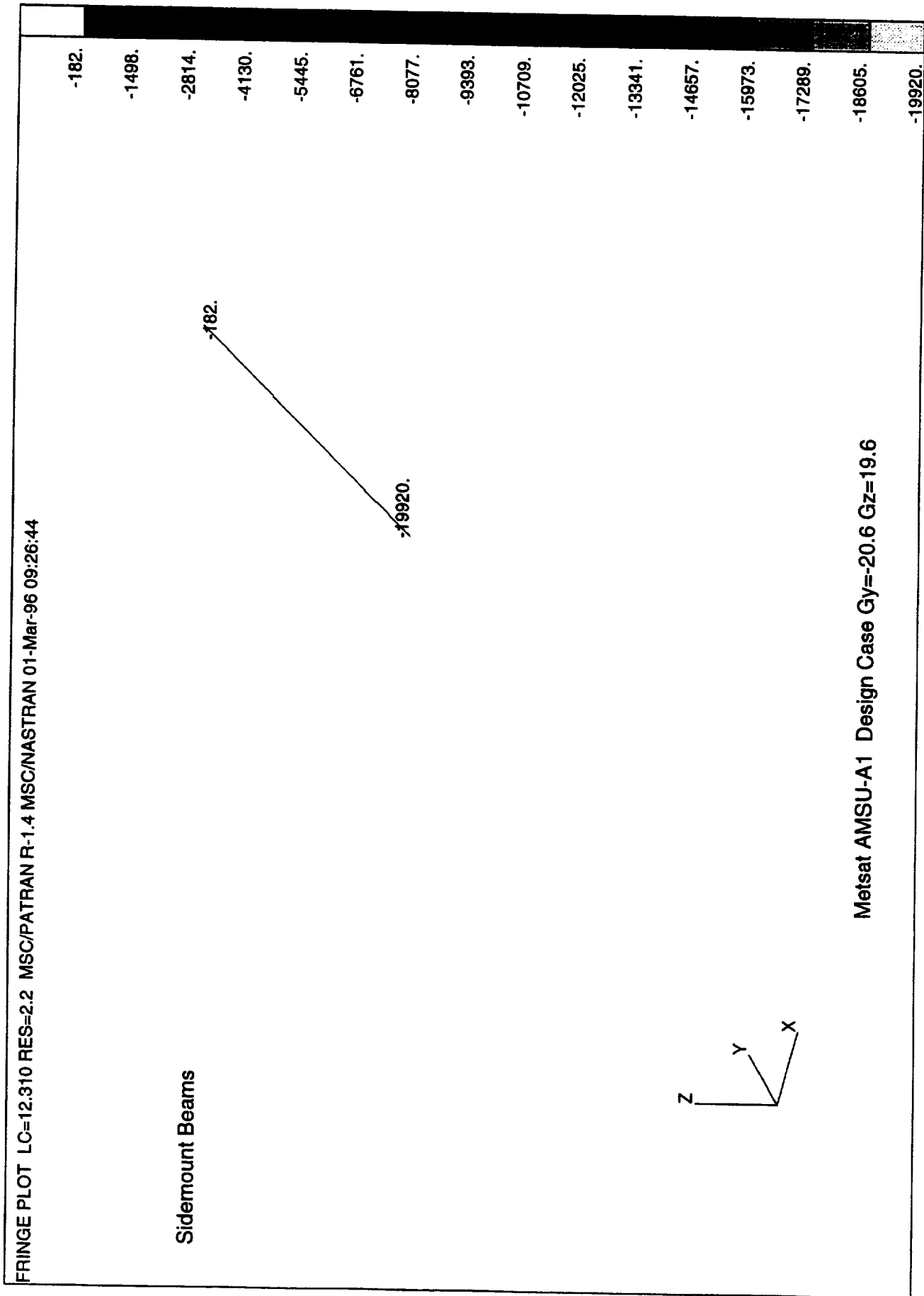
FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 08:41:22

Sidemount Beams



55.
-1713.
-3480.
-5248.
-7016.
-8783.
-10551.
-12318.
-14086.
-15854.
-17621.
-19389.
-21156.
-22924.
-24691.
-26459.

Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

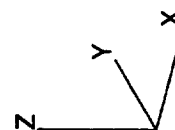


FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 09:26:33

Sidemount Beams

-678.

17605.



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

17605.

16386.

15167.

13948.

12730.

11511.

10292.

9073.

7854.

6635.

5416.

4198.

2979.

1760.

541.

-678.

Metsat AMSU-A1
Upper Reflector

Time: 13:44:19
Date: 02/29/96

Contour
Mode Scalar1

Color Index	
0	0.707E+03
9	0.630E+03
8	0.553E+03
7	0.477E+03
6	0.400E+03
5	0.323E+03
4	0.246E+03
3	0.169E+03
2	0.926E+02
1	0.158E+02

Min = 1.579119E+01

Max = 7.836815E+02

Min ID= 4325

Max ID= 4355

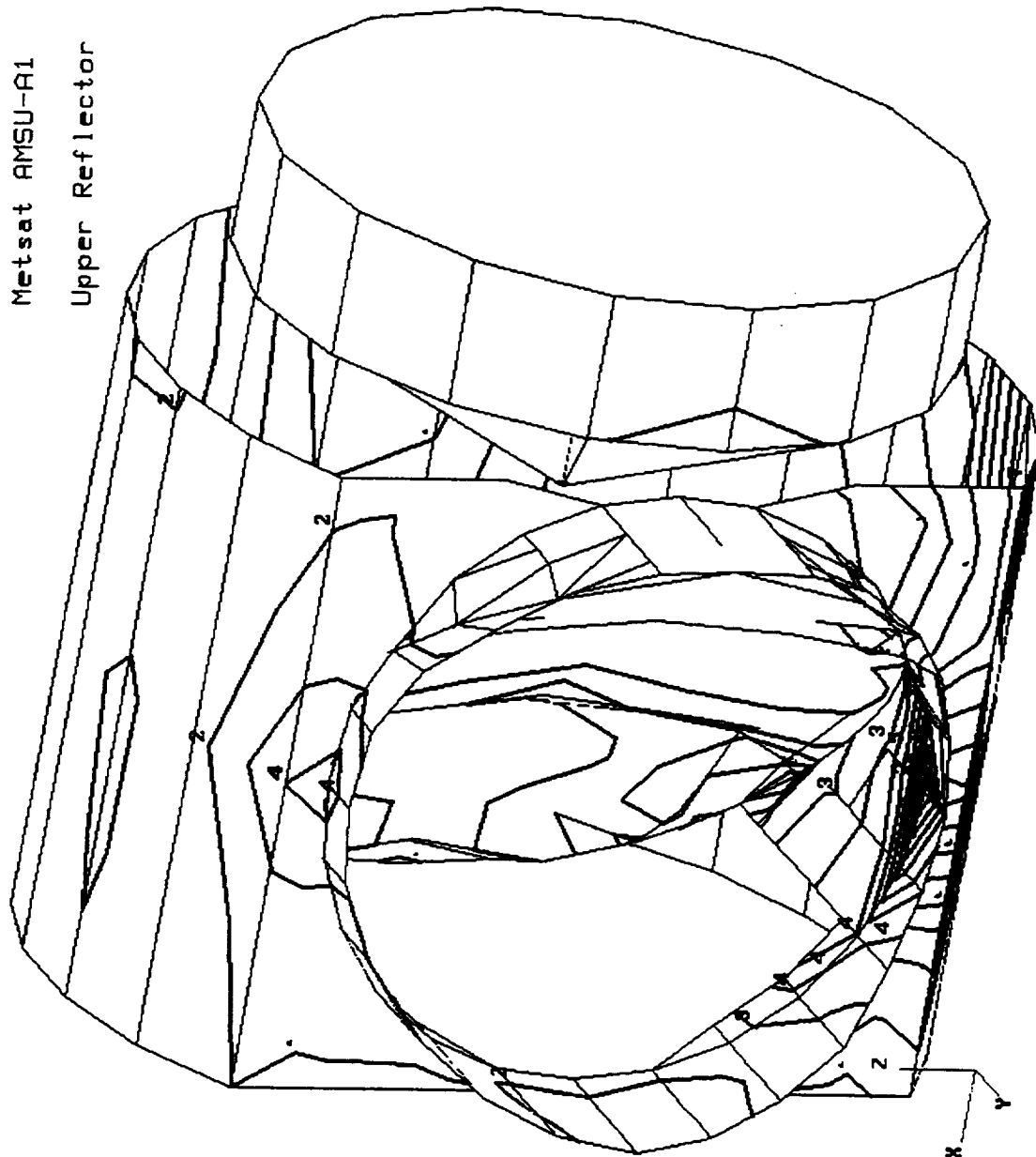
Contour_5:

Stress Tensor

Von Mises

At 21

Design_0y=-20.6_0z=19.6
Static Subcase



Time: 13:43:47
Date: 02/29/96

Contour
Node Scalar1

Color Index

—	0	0.700E+03
—	9	0.631E+03
—	8	0.554E+03
—	7	0.477E+03
—	6	0.400E+03
—	5	0.322E+03
—	4	0.245E+03
—	3	0.168E+03
—	2	0.910E+02
—	1	0.139E+02

Min = 1.389748E+01

Max = 7.851481E+02

Min ID= 4325

Max ID= 4355

Contour_6:

Stress Tensor

Von Mises

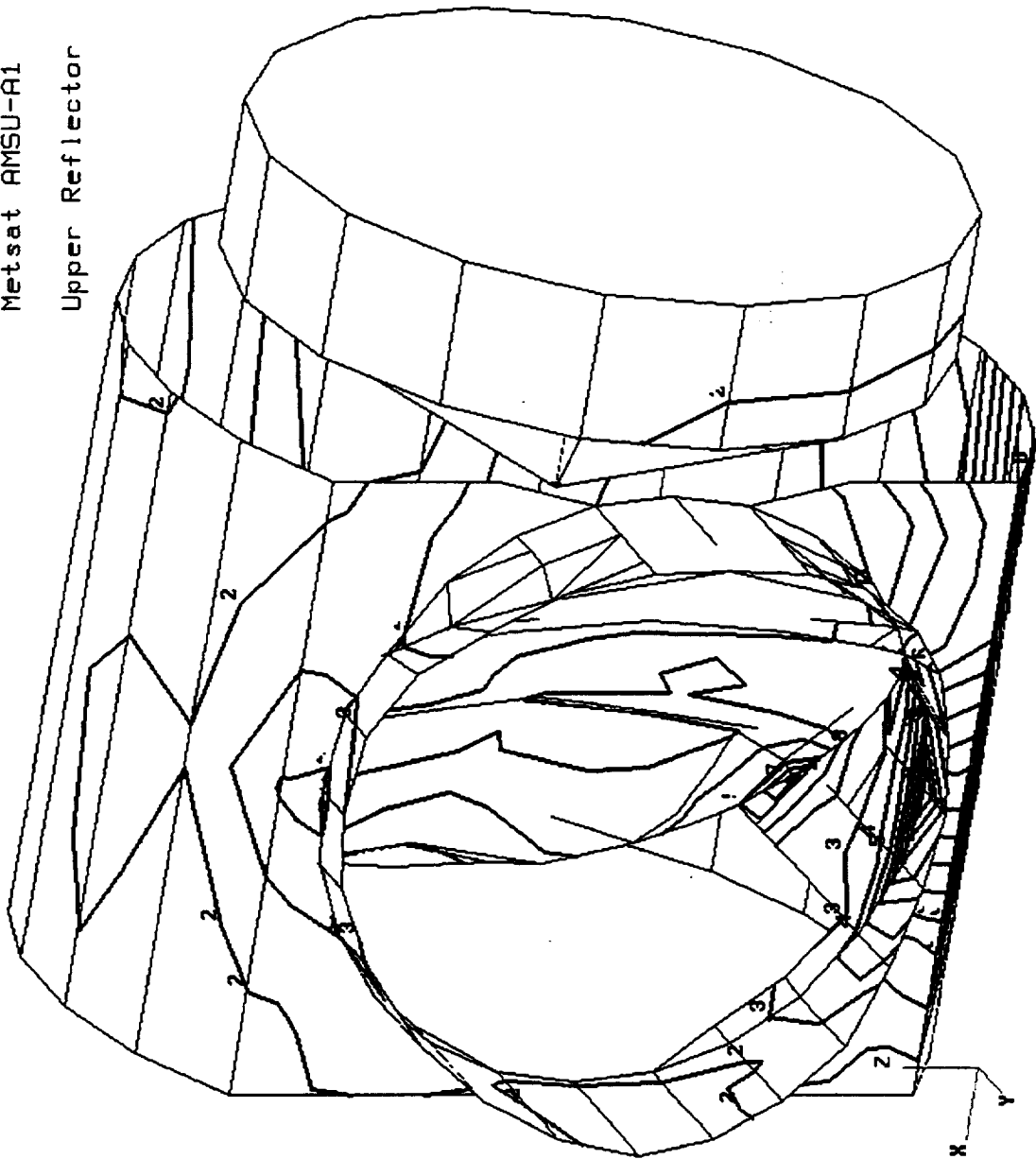
At 22

Design_Oy=-20.6_Oz=19.6

Static Subcase

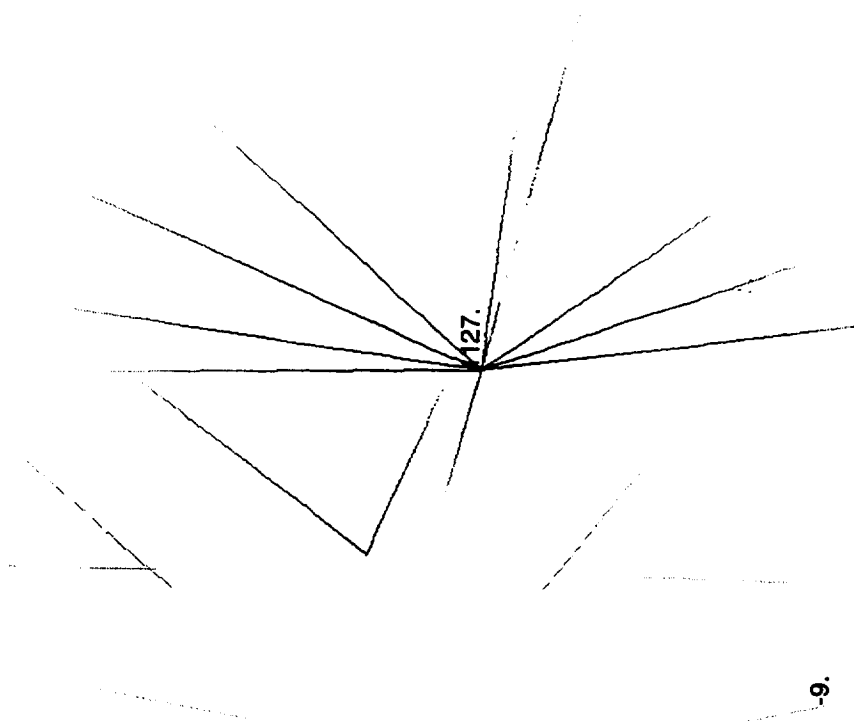
Metsat AMSU-A1

Upper Reflector



FRINGE PLOT LC=12.310 RES=2.1 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:08:30

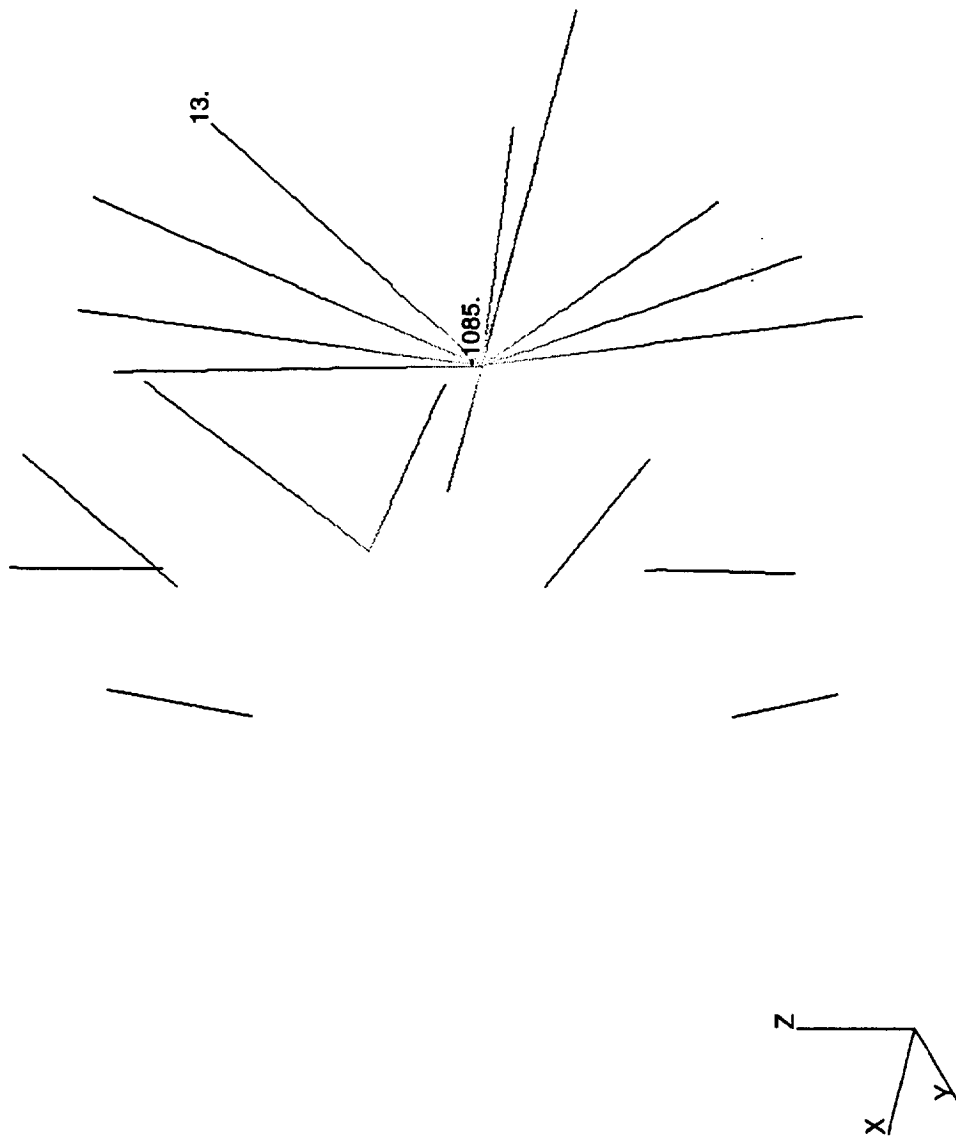
Upper Reflector Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

FRINGE PLOT LC=12.310 RES=2.2 MSC/PATRAN R-1.4 MSC/NASTRAN 01-Mar-96 14:08:35

Upper Reflector Beams



Metsat AMSU-A1 Design Case Gy=-20.6 Gz=19.6

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APPENDIX D

RANDOM VIBRATION STRESSES

(7% CRITICAL DAMPING $Q=7$)

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Appendix D
RANDOM VIBRATION STRESSES
(7% CRITICAL DAMPING $Q=7$)

[illegible]

215 Z1	3)		411	419	1257		592	614	1842		917	952	2855
	5)		146				208				299		
	7)		47				94				150		
215 Z2	10)		424	429	1288		604	625	1876		926	943	2829
	12)		169				197				284		
	14)		39				95				106		
3524 Z1	3)		207	230	690		209	278	834		340	422	1267
	5)		97				80				109		
	7)		55				117				161		
3524 Z2	10)		205	225	674		202	285	854		338	411	1233
	12)		91				99				122		
	14)		51				124				145		

ELEMENT ID.	STRESS ID.	X-LOAD			Y-LOAD			Z-LOAD		
		RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS
10	2)	90	135	405	131	179	537	242	290	869
	3)	49	94	283	124	172	515	200	248	743
	4)	49	94	283	124	172	515	200	248	743
	5)	90	135	405	131	179	537	242	290	869
	6)	45			48			48		
	12)	356	401	1203	283	331	993	250	298	893
25(	13)	124	169	507	111	159	478	226	274	821
	14)	124	169	507	111	159	478	226	274	821
	15)	356	401	1203	283	331	993	250	298	893
	2)	557	571	1712	1318	1365	4095	1509	1537	4612
	3)	556	570	1709	1300	1347	4040	1502	1530	4589
	4)	556	570	1709	1300	1347	4040	1502	1530	4589
34	5)	557	571	1712	1318	1365	4095	1509	1537	4612
	6)	14			47			28		
	12)	587	601	1804	1419	1466	4397	1605	1633	4898
	13)	614	628	1884	1404	1451	4352	1623	1651	4952
	14)	614	628	1884	1404	1451	4352	1623	1651	4952
	15)	587	601	1804	1419	1466	4397	1605	1633	4898
	2)	467	495	1485	1108	1154	3463	1333	1385	4155
	3)	468	496	1489	1114	1160	3479	1336	1388	4165
	4)	468	496	1489	1114	1160	3479	1336	1388	4165
	5)	467	495	1485	1108	1154	3463	1333	1385	4155
	6)	28			46			52		
	12)	685	713	2139	1543	1589	4768	1835	1887	5662
	13)	676	704	2113	1539	1585	4756	1813	1865	5595
	14)	676	704	2113	1539	1585	4756	1813	1865	5595

35	15)	685	713	2139	1543	1589	4768	1835	1887	5662
	2)	666	703	2108	1499	1555	4665	1842	1898	5693
	3)	656	693	2079	1496	1552	4655	1820	1876	5627
	4)	656	693	2079	1496	1552	4655	1820	1876	5627
	5)	666	703	2108	1499	1555	4665	1842	1898	5693
	6)	37			56			56		
36	12)	681	718	2154	1552	1608	4825	1925	1981	5944
	13)	682	719	2158	1530	1586	4757	1946	2002	6006
	14)	682	719	2158	1530	1586	4757	1946	2002	6006
	15)	681	718	2154	1552	1608	4825	1925	1981	5944
	2)	642	692	2077	1688	1791	5374	1753	1804	5413
	3)	616	666	1998	1672	1775	5326	1766	1817	5450
87	4)	616	666	1998	1672	1775	5326	1766	1817	5450
	5)	642	692	2077	1688	1791	5374	1753	1804	5413
	6)	50			103			51		
	12)	327	377	1130	958	1061	3183	928	979	2937
	13)	344	394	1183	952	1055	3164	955	1006	3017
	14)	344	394	1183	952	1055	3164	955	1006	3017
88	15)	327	377	1130	958	1061	3183	928	979	2937
	2)	538	562	1687	1100	1128	3384	1220	1234	3702
	3)	542	566	1698	1094	1122	3366	1196	1210	3629
	4)	542	566	1698	1094	1122	3366	1196	1210	3629
	5)	538	562	1687	1100	1128	3384	1220	1234	3702
	6)	24			28			14		
88	12)	518	542	1626	1145	1173	3518	1172	1186	3558
	13)	520	544	1632	1129	1157	3471	1160	1174	3523
	14)	520	544	1632	1129	1157	3471	1160	1174	3523
	15)	518	542	1626	1145	1173	3518	1172	1186	3558
	2)	549	588	1764	1204	1248	3743	1221	1247	3741
	3)	551	590	1769	1188	1232	3697	1209	1235	3706
88	4)	551	590	1769	1188	1232	3697	1209	1235	3706
	5)	549	588	1764	1204	1248	3743	1221	1247	3741
	6)	39			44			26		
	12)	834	873	2618	1759	1803	5409	1807	1833	5500
	13)	834	873	2620	1917	1961	5884	1912	1938	5814
	14)	834	873	2620	1917	1961	5884	1912	1938	5814
	15)	834	873	2618	1759	1803	5409	1807	1833	5500

89	2)	701	733	2200	1550	1582	4746	1552	1609	4827
	3)	700	732	2197	1477	1509	4528	1497	1554	4663
	4)	700	732	2197	1477	1509	4528	1497	1554	4663
	5)	701	733	2200	1550	1582	4746	1552	1609	4827
	6)	32			32			57		
	12)	158	190	569	157	189	567	270	327	982
	13)	156	188	565	226	258	773	283	340	1021
	14)	156	188	565	226	258	773	283	340	1021
	15)	158	190	569	157	189	567	270	327	982
93	2)	221	288	865	436	475	1425	594	613	1840
	3)	220	287	862	433	472	1416	602	621	1863
	4)	220	287	862	433	472	1416	602	621	1863
	5)	221	288	865	436	475	1425	594	613	1840
	6)	67			39			19		
	12)	362	429	1287	603	642	1926	871	890	2671
	13)	359	426	1278	612	651	1953	851	870	2610
	14)	359	426	1278	612	651	1953	851	870	2610
	15)	362	429	1287	603	642	1926	871	890	2671

[illegible]

2503 Z2	7)	184	3130	9391	43	1048	3145	23	842	2527
	10)	3105			1042			840		
	12)	1075			378			280		
	14)	230			62			33		
2496 Z1	3)	2685	2743	8228	971	993	2978	888	912	2736
	5)	1203			427			412		
	7)	298			110			111		
2496 Z2	10)	2939	2998	8995	1027	1068	3203	930	980	2939
	12)	1453			554			504		
	14)	304			145			154		

	15)		426	1122	3365		367	516	1549	190	271	814
2602	2)		154	859	2578		64	218	654	25	104	312
	3)		245	950	2850		83	237	711	34	113	338
	4)		1234	1939	5818		636	790	2371	183	262	786
	5)		1203	1908	5724		632	786	2357	180	259	777
	6)		705				154			79		
	12)		386	1091	3272		137	291	873	113	192	577
	13)		148	853	2559		73	227	682	72	151	452
	14)		1954	2659	7978		726	880	2639	312	391	1174
	15)		2022	2727	8180		745	899	2697	337	416	1249
2564	2)		765	1752	5255		197	416	1248	172	297	892
	3)		790	1777	5330		191	410	1231	147	272	816
	4)		790	1777	5330		191	410	1231	147	272	816
	5)		765	1752	5255		197	416	1248	172	297	892
	6)		987				219			125		
	12)		2610	3597	10792		582	801	2402	267	392	1175
	13)		2586	3573	10719		572	791	2374	262	387	1162
	14)		2586	3573	10719		572	791	2374	262	387	1162
	15)		2610	3597	10792		582	801	2402	267	392	1175

7075-T6 FTY=66000 PSI

[illegible]

	15)		207	441	1323		130	275	824		135	232	697
2413	2)		151	246	739		122	170	510		107	141	422
	3)		218	313	940		242	290	870		395	429	1287
	4)		218	313	940		242	290	870		395	429	1287
	5)		151	246	739		122	170	510		107	141	422
	6)		95				48				34		
	12)		38	133	400		16	64	193		14	48	145
	13)		40	135	405		31	79	238		35	69	207
	14)		40	135	405		31	79	238		35	69	207
	15)		38	133	400		16	64	193		14	48	145

UPPER MOTOR MT PANEL		BEAM ELEMENT		7075-T6 FTY=66000 PSI		X-LOAD		Y-LOAD		Z-LOAD	
ELEMENT ID.	STRESS ID.	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	
2444	4)	1482		4447	495		1484	301		902	
	5)	1052		3155	371		1114	228		683	
	6)	1436		4308	490		1470	299		898	
	7)	1095		3285	373		1120	226		678	
	104)	846		2539	491		1472	300		900	
	105)	2504		7513	924		2771	564		1691	
	106)	778		2335	453		1359	275		826	
2397	107)	2559		7678	955		2866	583		1748	
	4)	1212		3635	501		1503	386		1158	
	5)	761		2283	397		1192	333		998	
	6)	1073		3219	423		1269	329		987	
	7)	1150		3450	446		1337	339		1016	
	104)	292		877	138		414	115		344	
	105)	498		1493	174		522	139		418	
2396	106)	1265		3795	443		1328	287		860	
	107)	1137		3410	404		1212	269		807	
	4)	1579		4736	688		2065	438		1314	
	5)	2097		6291	775		2324	569		1708	
	6)	1748		5245	667		2001	393		1179	
	7)	1671		5013	669		2007	377		1130	
	104)	637		1910	302		905	262		785	
2395	105)	304		912	299		897	227		680	
	106)	1473		4419	552		1655	273		818	
	107)	1386		4157	505		1516	255		765	
	4)	854		2562	315		946	215		646	
	5)	1469		4406	496		1489	337		1012	

6)	508	1525	384	1153	282	847
7)	502	1505	397	1190	290	869
104)	1618	4853	723	2169	521	1562
105)	957	2872	479	1438	383	1150
106)	572	1715	468	1405	372	1116
107)	669	2007	509	1528	395	1186

LOWER FRONT PANEL QUAD ELEMENT											
6061-T6 FTY=35000 PSI											

1240 Z2	7)	122	325	974	113	374	1121	93	275	825
	10)	235			305			235		
	12)	125			125			66		
	14)	134			130			92		
1334 Z1	3)	47	153	458	66	225	675	56	241	724
	5)	32			68			66		
	7)	113			158			180		
1334 Z2	10)	60	201	602	73	139	418	39	186	559
	12)	74			66			65		
	14)	133			70			134		

[illegible]

1216	15)	94	109	327	229	250	749	152	162	487
	2)	514	555	1665	221	303	908	468	658	1973
	3)	143	184	552	183	265	795	461	651	1953
	4)	143	184	552	183	265	795	461	651	1953
	5)	514	555	1665	221	303	908	468	658	1973
	6)	41			82			190		
1363	12)	444	485	1456	225	307	920	374	564	1691
	13)	228	269	808	298	380	1140	668	858	2574
	14)	228	269	808	298	380	1140	668	858	2574
	15)	444	485	1456	225	307	920	374	564	1691
	2)	38	153	460	53	175	525	58	186	559
	3)	41	156	467	31	153	458	32	160	479
1369	4)	41	156	467	31	153	458	32	160	479
	5)	38	153	460	53	175	525	58	186	559
	6)	115			122	244	731	128		
	12)	43	158	474	59	181	544	66	194	581
	13)	64	179	538	37	159	476	37	165	496
	14)	64	179	538	37	159	476	37	165	496
1369	15)	43	158	474	59	181	544	66	194	581
	2)	96	129	386	88	168	505	87	178	535
	3)	157	190	570	125	205	616	110	201	604
	4)	157	190	570	125	205	616	110	201	604
	5)	96	129	386	88	168	505	87	178	535
	6)	33			80			91		
1369	12)	78	111	332	58	138	413	46	137	410
	13)	149	182	545	126	206	619	107	198	593
	14)	149	182	545	126	206	619	107	198	593
	15)	78	111	332	58	138	413	46	137	410

D-22

	7)		203					147				116		
344 Z2	10)		140			384	1152	186	404	1212		249	471	1412
	12)		181					199				161		
	14)		222					212				262		
352 Z1	3)		140			397	1191	84	313	939		105	375	1124
	5)		239					153				73		
	7)		202					192				286		
352 Z2	10)		125			380	1140	84	322	965		99	408	1224
	12)		211					182				167		
	14)		208					182				273		

[illegible]

305	15)	594	630	1891		191	221	664	231	262	785
	2)	336	353	1058		284	304	913	365	417	1252
	3)	287	304	912		224	244	733	167	219	658
	4)	287	304	912		224	244	733	167	219	658
	5)	336	353	1058		284	304	913	365	417	1252
	6)	17				20			52		
	12)	67	84	253		44	64	191	24	76	227
	13)	209	226	677		179	199	597	132	184	553
	14)	209	226	677		179	199	597	132	184	553
	15)	67	84	253		44	64	191	24	76	227

[illegible]

UPPER BASEPLATE BAR ELEMENT		6061-T6 FTY=35000 PSI		X-LOAD		Y-LOAD		Z-LOAD		
ELEMENT ID.	STRESS ID.	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS
5805	2)	340	443	1328	272	348	1043	188	253	759
	3)	214	317	951	210	286	857	116	181	544
	4)	214	317	951	210	286	857	116	181	544
	5)	340	443	1328	272	348	1043	188	253	759
	6)	103			76			65		
	12)	1614	1717	5150	1256	1332	3997	813	878	2635
621	13)	1622	1725	5175	1347	1423	4269	787	852	2556
	14)	1622	1725	5175	1347	1423	4269	787	852	2556
	15)	1614	1717	5150	1256	1332	3997	813	878	2635
	2)	586	691	2074	461	540	1620	311	372	1116
	3)	538	643	1929	405	484	1452	235	296	887
	4)	538	643	1929	405	484	1452	235	296	887
660	5)	586	691	2074	461	540	1620	311	372	1116
	6)	105			79			61		
	12)	113	218	655	117	196	588	71	132	395
	13)	187	292	875	121	200	600	91	152	455
	14)	187	292	875	121	200	600	91	152	455
	15)	113	218	655	117	196	588	71	132	395
	2)	129	193	579	187	234	701	153	269	808
	3)	55	119	358	158	205	615	227	343	1029
	4)	55	119	358	158	205	615	227	343	1029
	5)	129	193	579	187	234	701	153	269	808
	6)	64			47			116		
	12)	80	144	432	168	215	644	200	316	949
	13)	233	297	891	246	293	880	154	270	809
	14)	233	297	891	246	293	880	154	270	809

657	15)	80	144	432	168	215	644	200	316	949
	2)	35	106	318	96	210	630	144	241	724
	3)	65	136	409	80	194	583	41	138	413
	4)	65	136	409	80	194	583	41	138	413
	5)	35	106	318	96	210	630	144	241	724
	6)	71			114			97		
658	12)	171	242	725	342	456	1367	258	355	1066
	13)	143	214	641	350	464	1392	448	545	1635
	14)	143	214	641	350	464	1392	448	545	1635
	15)	171	242	725	342	456	1367	258	355	1066
	2)	71	131	394	257	357	1071	337	406	1218
	3)	83	143	429	225	325	974	358	427	1281
659	4)	83	143	429	225	325	974	358	427	1281
	5)	71	131	394	257	357	1071	337	406	1218
	6)	60			100			69		
	12)	219	279	838	333	433	1299	214	283	848
	13)	222	282	847	283	383	1150	216	285	856
	14)	222	282	847	283	383	1150	216	285	856
670	15)	219	279	838	333	433	1299	214	283	848
	2)	260	315	944	321	422	1267	190	266	798
	3)	131	186	559	232	333	998	217	293	880
	4)	131	186	559	232	333	998	217	293	880
	5)	260	315	944	321	422	1267	190	266	798
	6)	55			101			76		
670	12)	241	296	887	364	465	1396	246	322	965
	13)	70	125	376	229	330	989	370	446	1339
	14)	70	125	376	229	330	989	370	446	1339
	15)	241	296	887	364	465	1396	246	322	965
	2)	84	136	409	73	166	499	54	210	629
	3)	144	196	587	182	275	824	221	377	1131
670	4)	144	196	587	182	275	824	221	377	1131
	5)	84	136	409	73	166	499	54	210	629
	6)	52			93			156		
	12)	58	110	331	61	154	463	67	223	668
	13)	128	180	541	161	254	761	206	362	1087
	14)	128	180	541	161	254	761	206	362	1087
670	15)	58	110	331	61	154	463	67	223	668

UPPER FRONT PANEL
SQUAD ELEMENT
7075-T6 FTY=66000 PS

1551 Z2	7)	128	662	1985	148	633	1899	161	545	1636
	10)	182			151			90		
	12)	631			592			470		
	14)	122			140			185		
1544 Z1	3)	104	240	719	90	313	940	128	339	1017
	5)	58			110			166		
	7)	157			213			191		
1544 Z2	10)	101	272	815	101	325	976	167	342	1025
	12)	63			78			84		
	14)	189			236			212		

7075-T6 FTY=66000 PSI

1397	15)	1213	1697	5092	1645	2125	6376		769	984	2953
	2)	984	1388	4164	622	976	2929		629	1067	3201
	3)	960	1364	4091	643	997	2990	•	636	1074	3221
	4)	960	1364	4091	643	997	2990		636	1074	3221
	5)	984	1388	4164	622	976	2929		629	1067	3201
	6)	404			354				438		
1346	12)	203	607	1821	236	590	1769		195	633	1898
	13)	220	624	1871	244	598	1793		209	647	1942
	14)	220	624	1871	244	598	1793		209	647	1942
	15)	203	607	1821	236	590	1769		195	633	1898
	2)	354	383	1150	153	204	613		115	221	662
	3)	324	353	1058	178	229	687		286	392	1176
1350	4)	324	353	1058	178	229	687		286	392	1176
	5)	354	383	1150	153	204	613		115	221	662
	6)	29			51				106		
	12)	172	201	603	154	205	614		149	255	764
	13)	97	126	377	90	141	422		158	264	791
	14)	97	126	377	90	141	422		158	264	791
	15)	172	201	603	154	205	614		149	255	764
	2)	112	149	446	61	91	272		71	110	331
	3)	92	129	387	128	158	474		118	157	471
	4)	92	129	387	128	158	474		118	157	471
	5)	112	149	446	61	91	272		71	110	331
	6)	37			30				39		
	12)	33	70	211	31	61	184		27	66	197
	13)	80	117	351	116	146	438		118	157	471
	14)	80	117	351	116	146	438		118	157	471
	15)	33	70	211	31	61	184		27	66	197

UPPER AFT PANEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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6897 Z2	7)	602	1473	4420	148	498	1494	160	475	1425
	10)	537			283			244		
	12)	1114			343			333		
	14)	580			183			181		
6898 Z1	3)	1383	2139	6417	420	730	2189	548	783	2348
	5)	1258			638			635		
	7)	816			168			186		
6898 Z2	10)	1202	2038	6115	423	686	2058	541	748	2244
	12)	1172			571			584		
	14)	851			174			184		
7334 Z1	3)	2111	3861	11584	709	937	2810	704	977	2932
	5)	3681			740			819		
	7)	562			211			208		
7334 Z2	10)	1978	3752	11257	660	862	2587	677	918	2753
	12)	3606			739			809		
	14)	510			158			162		
7335 Z1	3)	3342	4576	13729	556	813	2440	667	956	2867
	5)	3981			722			829		
	7)	857			153			191		
7335 Z2	10)	3133	4371	13112	523	780	2339	636	904	2712
	12)	3899			709			810		
	14)	764			135			159		

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	15)		135	290	870		59	104	312	74	152	457
7262	2)		535	1067	3200		149	252	756	138	246	739
	3)		540	1072	3216		148	251	754	134	242	726
	4)		540	1072	3216		148	251	754	134	242	726
	5)		535	1067	3200		149	252	756	138	246	739
	6)		532				103			108		
	12)		757	1289	3868		122	225	676	139	247	740
	13)		701	1233	3699		114	217	652	129	237	710
	14)		701	1233	3699		114	217	652	129	237	710
	15)		757	1289	3868		122	225	676	139	247	740

[illegible]

1047 Z2	7)	418	896	2689	762	1794	5383	554	1391	4174
	10)	338			668			326		
	12)	544			1285			1086		
	14)	443			757			570		
1115, Z1	3)	253	577	1731	426	938	2815	624	1265	3795
	5)	207			159			184		
	7)	346			632			832		
1115 Z2	10)	242	586	1758	355	817	2452	614	1226	3677
	12)	180			237			176		
	14)	374			518			801		
1116 Z1	3)	233	611	1833	383	1093	3280	545	1481	4443
	5)	145			274			339		
	7)	420			762			1033		
1116 Z2	10)	211	618	1854	301	1003	3008	533	1451	4354
	12)	160			251			329		
	14)	432			726			1015		
1135 Z1	3)	232	520	1560	384	951	2854	500	1237	3711
	5)	148			286			362		
	7)	327			614			803		
1135 Z2	10)	212	547	1640	347	860	2579	532	1196	3589
	12)	167			264			352		
	14)	357			553			749		
1113 Z1	3)	164	370	1111	220	590	1770	141	701	2102
	5)	51			83			43		
	7)	257			433			607		
1113 Z2	10)	325	530	1589	317	642	1925	175	687	2061
	12)	149			106			66		
	14)	279			417			564		

[illegible]

[illegible]

1989(	7)	374	1063	3189	297	1241	3722	380	1574	4722
1989(	10)	735			956			1356		
1989(	12)	466			486			466		
1989(	14)	443			463			492		
1801(	3)	282	319	958	255	286	859	342	386	1158
1801(	5)	41			25			46		
1801(	7)	102			91			122		
1801(	10)	250	279	838	216	244	731	336	376	1129
1801(	12)	34			32			41		
1801(	14)	84			77			115		
1802(	3)	169	423	1270	146	365	1094	233	551	1653
1802(	5)	82			56			78		
1802(	7)	294			260			388		
1802(	10)	199	438	1314	183	404	1211	237	542	1625
1802(	12)	40			45			45		
1802(	14)	308			282			389		
1815(	3)	174	670	2009	157	572	1716	188	763	2289
1815(	5)	202			124			146		
1815(	7)	481			432			596		
1815(	10)	132	558	1673	105	518	1553	175	733	2198
1815(	12)	97			143			114		
1815(	14)	443			394			587		
2090(	3)	295	854	2563	337	838	2514	388	914	2741
2090(	5)	197			189			205		
2090(	7)	606			570			610		
2090(	10)	298	776	2329	241	678	2033	363	868	2605
2090(	12)	155			146			182		
2090(	14)	545			482			589		
2089(	3)	174	868	2605	225	822	2465	293	922	2766
2089(	5)	250			222			247		
2089(	7)	655			598			652		
2089(	10)	165	817	2452	144	720	2160	250	865	2595
2089(	12)	222			201			230		
2089(	14)	623			547			625		
2099(	3)	292	854	2562	326	826	2477	339	870	2611
2099(	5)	119			108			139		
2099(	7)	643			599			624		

2099(	10)		260	779	2337	210	673	2020	292	823	2469
2099(	12)		105			98			129		
2099(	14)		591			516			607		
2023(	3)		47	1516	4548	57	1391	4173	72	1366	4098
2023(	5)		1500			1379			1329		
2023(	7)		153			125			219		
2023(	10)		45	1510	4531	48	1282	3846	70	1337	4010
2023(	12)		1494			1263			1300		
2023(	14)		154			153			215		
1983(	3)		160	1141	3424	153	1054	3161	234	1138	3415
1983(	5)		1100			1012			1029		
1983(	7)		200			193			314		
1983(	10)		153	1126	3378	149	917	2751	238	1150	3450
1983(	12)		1089			869			1033		
1983(	14)		190			193			327		

[illegible]

[illegible]

LOWER RIGHT FRONT SUPPORT PANEL										
BAR ELEMENT										
6061-T6 FTY=35000 PSI										
		X-LOAD			Y-LOAD			Z-LOAD		
ELEMENT ID.	STRESS ID.	RMS COMP	RMS PRIN	RMS 3 SIG	RMS COMP	RMS PRIN	RMS 3 SIG	RMS COMP	RMS PRIN	RMS 3 SIG
		STRESS	STRESS	STRESS	STRESS	STRESS	STRESS	STRESS	STRESS	STRESS
2222(2)		122	246	738	169	218	655	154	235	705
2222(3)		97	221	663	237	286	859	204	285	856
2222(4)		97	221	663	237	286	859	204	285	856
2222(5)		122	246	738	169	218	655	154	235	705
2222(6)		124			49			81		
2222(12)		109	233	699	296	345	1034	258	339	1018
2222(13)		125	249	747	321	370	1111	320	401	1202
2222(14)		125	249	747	321	370	1111	320	401	1202
2222(15)		109	233	699	296	345	1034	258	339	1018
2219(2)		344	412	1236	121	170	509	80	120	361
2219(3)		563	631	1894	176	225	674	132	172	515
2219(4)		563	631	1894	176	225	674	132	172	515
2219(5)		344	412	1236	121	170	509	80	120	361
2219(6)		68			49			40		
2219(12)		842	910	2730	259	308	925	186	226	679
2219(13)		1218	1286	3859	390	439	1317	280	320	961
2219(14)		1218	1286	3859	390	439	1317	280	320	961
2219(15)		842	910	2730	259	308	925	186	226	679
2223(2)		191	414	1242	55	128	385	40	92	277
2223(3)		402	625	1874	116	189	566	51	103	309
2223(4)		402	625	1874	116	189	566	51	103	309
2223(5)		191	414	1242	55	128	385	40	92	277
2223(6)		223			73			52		
2223(12)		223	446	1339	81	154	463	46	98	295
2223(13)		294	517	1551	103	176	527	55	107	320
2223(14)		294	517	1551	103	176	527	55	107	320

2223(	15)	223	446	1339	81	154	463	46	98	295
2212(	2)	180	320	960	191	306	917	200	353	1058
2212(	3)	100	240	721	131	246	737	185	338	1015
2212(	4)	100	240	721	131	246	737	185	338	1015
2212(	5)	180	320	960	191	306	917	200	353	1058
2212(	6)	140			115			153		
2212(	12)	22	162	487	30	145	434	35	188	563
2212(	13)	16	156	469	26	141	422	33	186	559
2212(	14)	16	156	469	26	141	422	33	186	559
2212(	15)	22	162	487	30	145	434	35	188	563

[illegible]

589(	7)	53	254	761	107	721	2164	132	435	1305
589(	10)	188			320			208		
589(	12)	141			686			386		
589(	14)	86			119			105		
588(	3)	47	193	580	83	408	1224	51	337	1010
588(	5)	134			218			104		
588(	7)	93			248			258		
588(	10)	102	179	536	85	377	1130	59	358	1075
588(	12)	42			209			52		
588(	14)	102			221			303		
598(	3)	149	684	2052	162	548	1645	141	530	1590
598(	5)	631			406			353		
598(	7)	168			234			262		
598(	10)	232	309	927	178	369	1106	202	418	1255
598(	12)	280			243			148		
598(	14)	47			155			242		
530(	3)	210	462	1386	687	819	2457	567	686	2058
530(	5)	119			332			191		
530(	7)	294			253			243		
530(	10)	186	446	1337	725	882	2647	360	529	1588
530(	12)	118			349			213		
530(	14)	292			290			231		
580(	3)	173	342	1025	599	1281	3844	144	261	784
580(	5)	253			1130			131		
580(	7)	123			321			124		
580(	10)	192	318	953	754	1258	3773	125	318	954
580(	12)	227			1159			96		
580(	14)	107			223			207		

[illegible]

449(	15)	663	1022	3065	245	411	1232	413	653	1960
434(	2)	301	416	1247	176	288	863	134	244	731
434(	3)	189	304	912	116	228	683	114	224	671
434(	4)	189	304	912	116	228	683	114	224	671
434(	5)	301	416	1247	176	288	863	134	244	731
434(	6)	115			112			110		
434(	12)	245	360	1080	151	263	788	125	235	704
434(	13)	208	323	969	130	242	727	102	212	636
434(	14)	208	323	969	130	242	727	102	212	636
434(	15)	245	360	1080	151	263	788	125	235	704

[illegible]

464(	6)	52		155	124	373	142	427
464(	7)	51		153	124	372	142	426
464(	104)	97		290	228	685	184	553
464(	105)	102		305	261	782	199	598
464(	106)	243		730	582	1746	484	1452
464(	107)	242		726	579	1738	483	1448

UPPER RIGHT FRONT SUPPORT PANEL											
QUAD ELEMENT											
6061-T6 FTY=35000 PSI											
X-LOAD											
ELEMENT ID.	STRESS ID.	RMS COMP	RMS PRIN	RMS 3 SIG	RMS COMP STRESS						
		STRESS	STRESS	STRESS	STRESS						
2230(3)		43	230	689	110	265	796	63	142	425	
2230(5)		42			175			75			
2230(7)		187			119			72			
2230(10)		70	317	951	116	290	869	83	174	521	
2230(12)		198			261			122			
2230(14)		171			71			68			
2236(3)		107	292	877	501	513	1539	235	242	727	
2236(5)		40			111			45			
2236(7)		216			69			39			
2236(10)		113	297	890	528	541	1622	249	255	765	
2236(12)		55			123			81			
2236(14)		211			74			33			
2231(3)		80	266	798	328	351	1054	156	172	516	
2231(5)		34			98			43			
2231(7)		208			77			46			
2231(10)		75	265	795	334	395	1186	173	201	602	
2231(12)		47			115			74			
2231(14)		204			131			59			

[illegible]

2265(	15)	116	147	441	125	190	571	128	176	528
2261(	2)	201	239	718	128	171	514	77	110	329
2261(	3)	108	146	438	99	142	427	147	180	540
2261(	4)	108	146	438	99	142	427	147	180	540
2261(	5)	201	239	718	128	171	514	77	110	329
2261(	6)	38			43			33		
2261(	12)	147	185	555	233	276	829	129	162	486
2261(	13)	132	170	509	151	194	582	149	182	546
2261(	14)	132	170	509	151	194	582	149	182	546
2261(	15)	147	185	555	233	276	829	129	162	486
2266(	2)	706	1076	3227	243	385	1154	151	241	723
2266(	3)	178	548	1644	66	208	625	42	132	397
2266(	4)	178	548	1644	66	208	625	42	132	397
2266(	5)	706	1076	3227	243	385	1154	151	241	723
2266(	6)	370			142			90		
2266(	12)	337	707	2120	144	286	858	70	160	480
2266(	13)	180	550	1649	87	229	688	42	132	396
2266(	14)	180	550	1649	87	229	688	42	132	396
2266(	15)	337	707	2120	144	286	858	70	160	480

[illegible]

1575(	7)	111	184	552	105	306	919	115	329	986
1575(	10)	82			228			208		
1575(	12)	66			164			218		
1575(	14)	109			106			115		
1615(	3)	398	760	2279	406	856	2569	393	743	2229
1615(	5)	649			821			698		
1615(	7)	200			126			125		
1615(	10)	318	697	2091	417	916	2748	350	767	2300
1615(	12)	633			848			720		
1615(	14)	156			184			140		

[illegible]

[illegible]

[illegible]

2194(	6)	77	232	45	136	47	142
2194(	7)	71	212	53	158	70	210
2194(	104)	22	67	22	65	31	92
2194(	105)	38	115	14	41	28	85
2194(	106)	56	169	74	221	71	214
2194(	107)	40	120	19	56	31	94

[illegible]

2810(	7)	65	145	434		87	614	1843	114		
2810(	10)	40				186			189	620	1861
2810(	12)	100				603			595		
2810(	14)	68				70			105		
5724(	3)	790	815	2446		739	754	2262	584	594	1783
5724(	5)	299				222			184		
5724(	7)	115				88			65		
5724(	10)	706	736	2209		699	714	2143	525	535	1605
5724(	12)	252				252			194		
5724(	14)	121				84			58		
3050(	3)	509	893	2680		405	600	1800	308	463	1389
3050(	5)	659				369			291		
3050(	7)	300				212			163		
3050(	10)	458	651	1952		387	581	1744	297	443	1328
3050(	12)	467				395			295		
3050(	14)	188				190			146		
5725(	3)	249	668	2003		105	423	1270	83	337	1010
5725(	5)	628				396			316		
5725(	7)	128				94			73		
5725(	10)	261	579	1737		158	412	1235	129	323	969
5725(	12)	544				384			301		
5725(	14)	106				84			65		
5029(	3)	99	345	1036		52	284	852	61	253	760
5029(	5)	71				174			154		
5029(	7)	260				159			138		
5029(	10)	90	321	964		67	230	689	49	157	472
5029(	12)	69				144			83		
5029(	14)	241				118			89		
5030(	3)	49	247	742		38	231	692	63	170	511
5030(	5)	82				82			88		
5030(	7)	181				169			94		
5030(	10)	47	228	684		32	150	451	56	146	437
5030(	12)	69				80			70		
5030(	14)	170				92			82		
3052(	3)	52	198	594		133	240	719	130	198	594
3052(	5)	38				73			110		
3052(	7)	153				133			77		

3052(	10)	134	268	804	186	230	689	251	287	860
3052(	12)	80			62			52		
3052(	14)	159			86			91		
3030(	3)	190	278	835	422	437	1310	231	253	759
3030(	5)	101			96			104		
3030(	7)	125			70			57		
3030(	10)	231	315	944	495	521	1564	407	416	1248
3030(	12)	113			126			52		
3030(	14)	130			102			57		
3042(	3)	118	265	794	337	392	1176	166	212	637
3042(	5)	82			108			108		
3042(	7)	164			125			69		
3042(	10)	181	310	930	400	427	1280	342	365	1094
3042(	12)	98			120			52		
3042(	14)	165			89			84		
2815(	3)	96	294	882	303	826	2478	72	248	744
2815(	5)	249			809			222		
2815(	7)	94			94			68		
2815(	10)	87	295	886	224	723	2169	232	653	1958
2815(	12)	251			697			642		
2815(	14)	96			114			67		
2816(	3)	71	257	770	208	637	1912	88	302	906
2816(	5)	205			626			262		
2816(	7)	98			71			93		
2816(	10)	66	319	957	159	645	1934	176	624	1872
2816(	12)	279			619			598		
2816(	14)	101			113			108		
2883(	3)	259	365	1095	168	273	820	81	247	740
2883(	5)	55			138			62		
2883(	7)	181			119			175		
2883(	10)	310	408	1223	152	351	1052	88	248	744
2883(	12)	71			200			71		
2883(	14)	182			173			168		
2884(	3)	261	385	1156	204	289	868	77	234	701
2884(	5)	85			61			43		
2884(	7)	193			139			173		
2884(	10)	319	435	1306	154	272	817	88	246	738

2884(	12)	88				39			37		
2884(	14)	201				166			182		
5008(	3)	183	281	843		146	236	707	56	221	664
5008(	5)	40				103			40		
5008(	7)	154				109			173		
5008(	10)	225	322	965		121	356	1067	69	220	659
5008(	12)	52				148			45		
5008(	14)	162				221			162		

[illegible]

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2643(	15)	783	1179	3537		187	526	1578		205	380	1140
2652(	2)	952	1134	3403		300	577	1730		295	393	1178
2652(	3)	1127	1309	3926		508	785	2356		318	416	1247
2652(	4)	1127	1309	3926		508	785	2356		318	416	1247
2652(	5)	952	1134	3403		300	577	1730		295	393	1178
2652(	6)	182				277				98		
2652(	12)	749	931	2794		202	479	1437		182	280	839
2652(	13)	527	709	2126		298	575	1726		176	274	821
2652(	14)	527	709	2126		298	575	1726		176	274	821
2652(	15)	749	931	2794		202	479	1437		182	280	839
2646(	2)	71	269	808		112	200	600		201	261	782
2646(	3)	118	316	947		137	225	676		189	249	748
2646(	4)	118	316	947		137	225	676		189	249	748
2646(	5)	71	269	808		112	200	600		201	261	782
2646(	6)	198				88				60		
2646(	12)	154	352	1055		106	194	583		58	118	353
2646(	13)	170	368	1104		134	222	666		59	119	356
2646(	14)	170	368	1104		134	222	666		59	119	356
2646(	15)	154	352	1055		106	194	583		58	118	353
2651(	2)	284	460	1381		465	742	2227		213	582	1747
2651(	3)	468	644	1932		380	657	1971		403	772	2317
2651(	4)	468	644	1932		380	657	1971		403	772	2317
2651(	5)	284	460	1381		465	742	2227		213	582	1747
2651(	6)	176				277				369		
2651(	12)	392	568	1703		681	958	2873		810	1179	3538
2651(	13)	334	510	1529		410	687	2061		983	1352	4057
2651(	14)	334	510	1529		410	687	2061		983	1352	4057
2651(	15)	392	568	1703		681	958	2873		810	1179	3538

[illegible]

[illegible]

[illegible]

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2690(	15)	1142	1898	5693	325	710	2129	224	445	1335
2687(	2)	955	1502	4506	586	929	2787	674	1017	3051
2687(	3)	995	1542	4627	550	893	2678	659	1002	3007
2687(	4)	995	1542	4627	550	893	2678	659	1002	3007
2687(	5)	955	1502	4506	586	929	2787	674	1017	3051
2687(	6)	547			343			343		
2687(	12)	373	920	2760	396	739	2216	372	715	2144
2687(	13)	385	932	2795	406	749	2247	378	721	2164
2687(	14)	385	932	2795	406	749	2247	378	721	2164
2687(	15)	373	920	2760	396	739	2216	372	715	2144
2692(	2)	400	499	1496	459	537	1610	679	742	2225
2692(	3)	454	553	1658	446	524	1572	407	470	1409
2692(	4)	454	553	1658	446	524	1572	407	470	1409
2692(	5)	400	499	1496	459	537	1610	679	742	2225
2692(	6)	99			78			63		
2692(	12)	141	240	720	120	198	593	113	176	528
2692(	13)	141	240	720	129	207	620	137	200	601
2692(	14)	141	240	720	129	207	620	137	200	601
2692(	15)	141	240	720	120	198	593	113	176	528

UPPER RIGHT WARMLoad SHIELD														
BAR ELEMENT														
6061-T6 FTY=35000 PSI														
ELEMENT ID.	STRESS ID.	X-LOAD			Y-LOAD			Z-LOAD						
		RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS 3 SIG STRESS
2671(	2)	1407	2515	7546	523	903	2710	305	531	1593				
2671(	3)	1367	2475	7426	510	890	2671	296	522	1566				
2671(	4)	1367	2475	7426	510	890	2671	296	522	1566				
2671(	5)	1407	2515	7546	523	903	2710	305	531	1593				
2671(	6)	1108			380			226						
2671(	12)	2380	3488	10464	883	1263	3790	514	740	2221				
2671(	13)	2258	3366	10097	842	1222	3665	495	721	2164				
2671(	14)	2258	3366	10097	842	1222	3665	495	721	2164				
2671(	15)	2380	3488	10464	883	1263	3790	514	740	2221				
2666(	2)	419	435	1306	228	252	757	127	144	433				
2666(	3)	657	673	2018	287	311	933	172	189	568				
2666(	4)	657	673	2018	287	311	933	172	189	568				
2666(	5)	419	435	1306	228	252	757	127	144	433				
2666(	6)	16			24			17						
2666(	12)	465	481	1442	163	187	561	113	130	390				
2666(	13)	403	419	1258	222	246	739	128	145	435				
2666(	14)	403	419	1258	222	246	739	128	145	435				
2666(	15)	465	481	1442	163	187	561	113	130	390				
2660(	2)	122	177	530	280	313	938	152	182	547				
2660(	3)	263	318	953	305	338	1014	184	214	641				
2660(	4)	263	318	953	305	338	1014	184	214	641				
2660(	5)	122	177	530	280	313	938	152	182	547				
2660(	6)	55			33			30						
2660(	12)	189	244	732	132	165	496	65	95	284				
2660(	13)	189	244	732	133	166	498	59	89	267				
2660(	14)	189	244	732	133	166	498	59	89	267				
2660(	15)	189	244	732	132	165	496	65	95	284				

[illegible]

3593(7)	134	775	2324	372	1867	5602	115	462	1385
3593(10)	749			1749			434		
3593(12)	64			250			49		
3593(14)	134			438			106		
3594(3)	158	435	1305	482	2015	6046	331	410	1231
3594(5)	77			224			61		
3594(7)	315			1657			167		
3594(10)	286	535	1605	1003	2330	6990	435	547	1640
3594(12)	68			152			67		
3594(14)	341			1700			232		
3685(3)	235	287	861	275	317	952	326	382	1147
3685(5)	53			36			27		
3685(7)	110			109			142		
3685(10)	207	256	767	309	360	1081	347	393	1178
3685(12)	54			29			35		
3685(14)	99			130			128		
3595(3)	476	632	1895	1177	2254	6761	653	714	2143
3595(5)	131			383			70		
3595(7)	279			1420			198		
3595(10)	310	549	1646	620	1968	5905	544	632	1897
3595(12)	140			412			72		
3595(14)	312			1448			223		
3547(3)	125	405	1214	418	2162	6487	197	320	961
3547(5)	44			171			46		
3547(7)	318			1864			184		
3547(10)	77	422	1266	233	2118	6355	138	358	1074
3547(12)	42			141			48		
3547(14)	362			1931			261		
3571(3)	703	1209	3626	1119	1953	5858	563	1275	3825
3571(5)	255			480			578		
3571(7)	695			1108			704		
3571(10)	618	1172	3517	991	1923	5769	704	1254	3762
3571(12)	298			480			642		
3571(14)	697			1160			580		

[illegible]

3249(	7)	118	1194	3582	98	1007	3022	107	1044	3131
3249(	10)	1181			993			1025		
3249(	12)	666			563			584		
3249(	14)	84			80			93		
3258(	3)	560	705	2114	487	601	1802	506	627	1881
3258(	5)	591			502			520		
3258(	7)	128			106			114		
3258(	10)	652	725	2175	550	605	1816	601	670	2010
3258(	12)	477			401			428		
3258(	14)	135			107			129		
3475(	3)	89	385	1156	71	351	1053	63	345	1034
3475(	5)	353			292			281		
3475(	7)	97			128			134		
3475(	10)	86	394	1182	100	469	1408	80	428	1283
3475(	12)	347			438			377		
3475(	14)	120			108			133		
3476(	3)	195	728	2184	166	611	1834	134	564	1692
3476(	5)	699			567			497		
3476(	7)	125			140			170		
3476(	10)	187	706	2117	202	767	2300	152	632	1895
3476(	12)	669			741			575		
3476(	14)	138			121			164		

[illegible]

3208(	15)		487	570	1711	692	854	2562	547	674	2021
3216(	2)		452	474	1422	508	540	1621	437	468	1403
3216(	3)		343	365	1094	557	589	1766	454	485	1456
3216(	4)		343	365	1094	557	589	1766	454	485	1456
3216(	5)		452	474	1422	508	540	1621	437	468	1403
3216(	6)		22			32			31		
3216(	12)		37	59	178	38	70	211	26	57	172
3216(	13)		45	67	201	41	73	219	44	75	225
3216(	14)		45	67	201	41	73	219	44	75	225
3216(	15)		37	59	178	38	70	211	26	57	172

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3387(	7)	88	268	804	97	332	997	71	234	703
3387(	10)	89			80			101		
3387(	12)	234			298			202		
3387(	14)	78			93			66		

[illegible]

[illegible]

[illegible]

[illegible]

2771(	7)	416	756	2267	472	694	2082	391	556	1669
2771(	10)	457			373			187		
2771(	12)	141			203			111		
2771(	14)	428			397			406		
2772(	3)	786	986	2957	815	1026	3077	650	848	2545
2772(	5)	250			258			267		
2772(	7)	383			402			339		
2772(	10)	734	965	2894	737	929	2787	623	838	2513
2772(	12)	265			278			261		
2772(	14)	401			353			352		
2760(	3)	1264	1344	4032	1233	1377	4130	1255	1359	4076
2760(	5)	520			517			460		
2760(	7)	257			352			306		
2760(	10)	1312	1431	4292	1198	1343	4028	1197	1330	3990
2760(	12)	510			536			467		
2760(	14)	331			342			338		
2761(	3)	1139	1363	4089	1296	1492	4476	1327	1513	4539
2761(	5)	353			391			399		
2761(	7)	476			464			455		
2761(	10)	1050	1392	4177	1293	1498	4494	1331	1546	4638
2761(	12)	348			381			393		
2761(	14)	598			479			498		
2782(	3)	183	683	2049	100	780	2341	100	559	1678
2782(	5)	125			194			129		
2782(	7)	528			632			444		
2782(	10)	291	723	2168	343	858	2574	251	638	1915
2782(	12)	113			171			113		
2782(	14)	513			595			451		
2783(	3)	978	1182	3547	1284	1467	4402	862	1004	3012
2783(	5)	372			427			334		
2783(	7)	407			436			308		
2783(	10)	1118	1274	3822	1287	1472	4417	892	1045	3134
2783(	12)	376			458			342		
2783(	14)	374			434			328		
2793(	3)	1344	1397	4190	1658	1732	5195	1237	1327	3982
2793(	5)	528			695			426		
2793(	7)	213			277			286		

2793(	10)	1381	1482	4445	1530	1643	4930	1167	1287	3860
2793(	12)	536			705			428		
2793(	14)	309			327			320		
2794(	3)	1587	1825	5474	2019	2232	6696	1601	1797	5390
2794(	5)	530			624			497		
2794(	7)	555			586			505		
2794(	10)	1491	1841	5524	2027	2282	6846	1611	1830	5491
2794(	12)	511			631			497		
2794(	14)	682			649			540		
2767(	3)	548	670	2009	699	773	2318	341	439	1316
2767(	5)	339			383			281		
2767(	7)	201			170			124		
2767(	10)	1007	1053	3159	1166	1199	3596	842	867	2601
2767(	12)	362			417			300		
2767(	14)	179			159			120		
2768(	3)	556	669	2008	619	822	2465	308	434	1302
2768(	5)	297			355			227		
2768(	7)	205			307			162		
2768(	10)	886	928	2784	998	1036	3109	723	740	2219
2768(	12)	319			388			240		
2768(	14)	159			158			92		
5091(	3)	805	948	2845	1523	1747	5241	716	839	2518
5091(	5)	940			1745			836		
5091(	7)	34			21			20		
5091(	10)	373	967	2901	783	1790	5370	359	860	2580
5091(	12)	959			1785			855		
5091(	14)	69			71			49		
5092(	3)	799	1048	3145	1344	1703	5108	687	883	2648
5092(	5)	982			1591			830		
5092(	7)	128			200			101		
5092(	10)	263	985	2956	611	1609	4826	297	833	2499
5092(	12)	980			1600			827		
5092(	14)	64			93			56		
5132(	3)	757	953	2860	1064	1306	3919	520	675	2026
5132(	5)	909			1221			638		
5132(	7)	93			144			76		
5132(	10)	292	920	2761	456	1235	3706	180	632	1897

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2730(	7)		175	418			323	503	1509		235	400	1201
2730(	10)		254		1253		232				161		
2730(	12)		92				142				114		
2730(	14)		231				312				262		
2744(	3)		243	707	2122		417	1084	3252		288	771	2314
2744(	5)		635				988				693		
2744(	7)		183				253				195		
2744(	10)		454	715	2144		771	1128	3385		564	799	2397
2744(	12)		663				1053				747		
2744(	14)		116				164				111		
2745(	3)		262	770	2311		462	1099	3298		321	800	2401
2745(	5)		708				1073				791		
2745(	7)		179				129				67		
2745(	10)		516	813	2438		878	1207	3620		659	890	2669
2745(	12)		746				1150				854		
2745(	14)		141				137				91		
2733(	3)		225	386	1157		326	555	1665		263	434	1303
2733(	5)		176				273				197		
2733(	7)		183				254				202		
2733(	10)		392	442	1326		705	751	2252		522	551	1652
2733(	12)		192				299				217		
2733(	14)		112				144				98		
2734(	3)		233	402	1207		439	525	1575		355	382	1147
2734(	5)		200				308				227		
2734(	7)		185				137				66		
2734(	10)		512	567	1701		908	937	2811		692	706	2117
2734(	12)		218				341				251		
2734(	14)		139				131				78		
2707(	3)		1129	1156	3468		2584	2634	7903		1574	1623	4868
2707(	5)		366				839				516		
2707(	7)		147				301				231		
2707(	10)		735	849	2548		2267	2339	7017		1416	1470	4410
2707(	12)		285				812				508		
2707(	14)		254				331				228		
2708(	3)		379	474	1423		856	989	2967		555	658	1974
2708(	5)		270				492				267		
2708(	7)		140				257				201		

2708(	10)	765	842	2526	1066	1208	3625	694	794	2381
2708(	12)	199			414			235		
2708(	14)	222			336			235		
2718(	3)	231	334	1003	808	863	2588	487	535	1605
2718(	5)	89			253			157		
2718(	7)	159			182			135		
2718(	10)	442	507	1520	1234	1306	3917	660	708	2123
2718(	12)	117			348			204		
2718(	14)	159			261			154		
2719(	3)	86	282	845	106	538	1615	41	345	1036
2719(	5)	67			106			69		
2719(	7)	205			432			290		
2719(	10)	177	351	1052	170	617	1850	113	378	1135
2719(	12)	79			121			89		
2719(	14)	217			470			277		
5710(	3)	71	132	396	37	157	472	19	70	211
5710(	5)	74			71			31		
5710(	7)	59			102			45		
5710(	10)	71	182	547	36	148	444	18	80	240
5710(	12)	131			74			49		
5710(	14)	75			91			44		
2711(	3)	348	651	1952	663	1551	4652	288	826	2479
2711(	5)	577			1524			803		
2711(	7)	150			155			112		
2711(	10)	782	872	2616	904	1565	4696	547	854	2563
2711(	12)	690			1539			840		
2711(	14)	128			132			65		
2712(	3)	396	774	2322	678	1622	4867	268	857	2571
2712(	5)	500			1607			840		
2712(	7)	322			121			102		
2712(	10)	677	777	2330	945	1680	5040	563	898	2695
2712(	12)	553			1657			881		
2712(	14)	149			131			77		
2722(	3)	216	325	976	196	513	1538	83	283	849
2722(	5)	99			410			199		
2722(	7)	158			181			130		
2722(	10)	241	329	987	854	897	2691	394	415	1244

2722(	12)	118					429				216		
2722(	14)	136					142				63		
2723(	3)	180	485	1454			291	531	1594		123	295	884
2723(	5)	122					459				234		
2723(	7)	332					132				103		
2723(	10)	318	395	1185			1073	1098	3294		490	508	1525
2723(	12)	129					506				254		
2723(	14)	143					123				68		

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3156(	6)	81	243	79	236	50	151
3156(	7)	127	381	89	266	88	263
3156(	104)	117	352	130	390	119	358
3156(	105)	50	149	116	347	67	202
3156(	106)	125	374	65	195	90	271
3156(	107)	46	137	94	282	46	138
3157(	4)	58	173	99	298	71	214
3157(	5)	121	363	129	386	115	345
3157(	6)	63	190	101	304	195	586
3157(	7)	122	367	112	336	94	283
3157(	104)	107	321	194	581	219	657
3157(	105)	157	470	268	805	253	760
3157(	106)	169	507	302	906	267	800
3157(	107)	143	428	233	699	283	849
3158(	4)	52	155	69	207	51	153
3158(	5)	121	363	136	409	97	290
3158(	6)	75	226	242	726	343	1029
3158(	7)	120	359	134	402	107	322
3158(	104)	117	352	158	474	145	436
3158(	105)	143	430	262	787	155	465
3158(	106)	148	445	161	482	102	307
3158(	107)	121	364	226	678	134	401
3155(	4)	67	200	57	171	56	168
3155(	5)	324	973	112	336	96	287
3155(	6)	65	196	139	418	115	345
3155(	7)	322	966	116	349	96	288
3155(	104)	223	669	118	353	95	285
3155(	105)	91	273	107	321	84	252
3155(	106)	209	628	66	199	62	185
3155(	107)	92	277	97	292	76	229
3154(	4)	300	900	97	290	81	244
3154(	5)	446	1339	153	459	216	647
3154(	6)	280	840	148	443	107	322
3154(	7)	449	1346	160	480	220	659
3154(	104)	126	377	84	252	136	409
3154(	105)	519	1557	174	523	167	500
3154(	106)	108	323	98	294	124	373

3154(	107)	521	1564	177	531	169	507
3162(	4)	44	131	64	193	65	194
3162(	5)	66	197	108	323	139	417
3162(	6)	98	293	65	195	61	184
3162(	7)	78	234	120	361	143	430
3162(	104)	107	321	173	518	180	539
3162(	105)	71	214	39	116	42	127
3162(	106)	111	332	204	612	200	600
3162(	107)	63	189	33	98	77	232
3153(	4)	38	113	60	180	81	244
3153(	5)	209	627	272	817	246	739
3153(	6)	206	619	123	368	260	780
3153(	7)	199	596	268	803	230	691
3153(	104)	136	409	134	401	137	412
3153(	105)	184	553	181	543	365	1095
3153(	106)	130	390	239	716	135	406
3153(	107)	185	556	182	547	375	1126

LOWER REFLECTOR QUAD ELEMENT															
6061-T6 FTY=35000 PSI															
</															

4532(	7)	348	2707	8122		139	1238	3713		122		
4532(	10)	970				459				427		3424
4532(	12)	2695				1232				1139		
4532(	14)	148				67				41		
4533(	3)	936	2800	8400		420	1265	3795		397	1179	3536
4533(	5)	2754				1238				1152		
4533(	7)	293				153				145		
4533(	10)	1042	2741	8224		449	1236	3708		432	1147	3440
4533(	12)	2737				1233				1145		
4533(	14)	81				46				37		
4514(	3)	609	1895	5686		357	1053	3158		334	981	2942
4514(	5)	1883				1048				976		
4514(	7)	124				60				54		
4514(	10)	637	1875	5624		378	1075	3225		359	1000	3001
4514(	12)	1853				1049				976		
4514(	14)	165				135				125		
4515(	3)	1922	1926	5779		1089	1096	3287		1011	1013	3040
4515(	5)	814				422				386		
4515(	7)	72				66				41		
4515(	10)	1895	1905	5715		1056	1061	3183		978	982	2946
4515(	12)	666				389				345		
4515(	14)	112				60				49		
4398(	3)	150	362	1087		131	271	812		78	200	601
4398(	5)	261				211				140		
4398(	7)	147				92				86		
4398(	10)	195	468	1403		141	330	990		88	273	818
4398(	12)	270				280				206		
4398(	14)	233				97				111		
4381(	3)	294	972	2915		188	570	1709		140	402	1206
4381(	5)	906				561				393		
4381(	7)	210				58				48		
4381(	10)	370	959	2877		194	608	1823		135	422	1265
4381(	12)	910				592				411		
4381(	14)	170				81				55		

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6497(	7)	158	952	2857		42		172	517		44		
6497(	10)	916				152					157		544
6497(	12)	404				70					80		
6497(	14)	142				45					50		
6498(	3)	298	864	2593		95		156	469		114	193	580
6498(	5)	490				79					92		
6498(	7)	460				69					90		
6498(	10)	326	896	2689		93		159	478		122	207	622
6498(	12)	490				79					91		
6498(	14)	481				73					100		
10401(	3)	380	867	2601		201		223	670		482	494	1481
10401(	5)	704				116					220		
10401(	7)	281				49					57		
10401(	10)	753	904	2713		168		194	581		415	432	1295
10401(	12)	676				118					196		
10401(	14)	186				44					63		
10403(	3)	386	1254	3762		137		253	758		334	501	1503
10403(	5)	1205				199					315		
10403(	7)	207				79					176		
10403(	10)	618	1353	4058		114		287	862		265	569	1706
10403(	12)	1264				205					339		
10403(	14)	256				120					264		
10395(	3)	79	497	1490		20		103	309		20	203	610
10395(	5)	489				98					184		
10395(	7)	56				20					60		
10395(	10)	107	417	1250		19		172	515		20	378	1135
10395(	12)	382				169					372		
10395(	14)	103				19					49		
10394(	3)	154	514	1541		58		93	280		116	172	515
10394(	5)	331				56					78		
10394(	7)	256				36					73		
10394(	10)	146	462	1387		82		107	321		168	199	598
10394(	12)	416				64					84		
10394(	14)	122				33					60		
6492(	3)	268	1996	5988		64		378	1134		97	718	2155
6492(	5)	1948				359					649		
6492(	7)	286				78					208		

6492(	10)		114	1803	5409		62	348	1043		79	563	1688
6492(	12)		1786				342				546		
6492(	14)		169				42				88		

[illegible]

5860(	14)	130	206	619	40	76	227	43	80	239
5860(	3)	125			42			47		
5860(	5)	138			50			53		
5860(	7)	75			29			30		
5986(	10)	479	589	1768	201	239	716	203	244	732
5986(	12)	136			57			59		
5986(	14)	224			83			87		
5986(	3)	176	294	882	99	155	466	92	153	460
5986(	5)	70			51			49		
5986(	7)	163			77			81		
5867(	10)	42	528	1583	19	256	768	20	259	776
5867(	12)	527			256			258		
5867(	14)	25			11			15		
5867(	3)	41	639	1917	19	267	800	19	266	799
5867(	5)	638			266			265		
5867(	7)	27			12			14		

POWER CONTROL/MONITOR - STANDOFFS													
BAR ELEMENT													
CRES 1/A HARD FTY=44000 PSI													
ELEMENT ID.	STRESS ID.	X-LOAD			Y-LOAD			Z-LOAD					
		RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS	RMS COMP STRESS	RMS PRIN STRESS	RMS 3 SIG STRESS
6479(	2)	511	540	1621	215	227	682	221	233	698			
6479(	3)	511	540	1621	215	227	682	221	233	698			
6479(	4)	126	155	466	93	105	316	86	98	294			
6479(	5)	126	155	466	93	105	316	86	98	294			
6479(	6)	29			12			12					
6479(	12)	7122	7151	21453	1605	1617	4850	1786	1798	5394			
6479(	13)	7122	7151	21453	1605	1617	4850	1786	1798	5394			
6479(	14)	2138	2167	6502	1440	1452	4355	1510	1522	4565			
6479(	15)	2138	2167	6502	1440	1452	4355	1510	1522	4565			
6485(	2)	202	215	644	108	116	347	88	94	281			
6485(	3)	202	215	644	108	116	347	88	94	281			
6485(	4)	149	162	485	138	146	437	113	119	356			
6485(	5)	149	162	485	138	146	437	113	119	356			
6485(	6)	13			8			6					
6485(	12)	2815	2828	8484	991	999	2996	1392	1398	4193			
6485(	13)	2815	2828	8484	991	999	2996	1392	1398	4193			
6485(	14)	2272	2285	6856	1747	1755	5264	2312	2318	6954			
6485(	15)	2272	2285	6856	1747	1755	5264	2312	2318	6954			
6480(	2)	134	180	539	33	44	131	42	53	158			
6480(	3)	134	180	539	33	44	131	42	53	158			
6480(	4)	94	140	419	58	69	207	62	73	219			
6480(	5)	94	140	419	58	69	207	62	73	219			
6480(	6)	46			11			11					
6480(	12)	7301	7347	22042	1430	1441	4324	1701	1712	5137			
6480(	13)	7301	7347	22042	1430	1441	4324	1701	1712	5137			
6480(	14)	5623	5669	17008	1174	1185	3555	1472	1483	4449			
6480(	15)	5623	5669	17008	1174	1185	3555	1472	1483	4449			

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10113(	7)		124	903		2710	156	563	1688		63		
10113(	10)		94				106				43	385	1154
10113(	12)		858				500				377		
10113(	14)		191				169				52		
10058(	3)		94	740		2221	96	528	1583		31	353	1060
10058(	5)		688				459				343		
10058(	7)		183				172				57		
10058(	10)		77	948		2845	96	548	1644		33	378	1133
10058(	12)		917				481				366		
10058(	14)		166				175				63		
10097(	3)		1267	1594		4782	189	242	725		156	211	633
10097(	5)		277				100				120		
10097(	7)		656				86				71		
10097(	10)		631	866		2597	95	181	544		108	184	551
10097(	12)		421				120				147		
10097(	14)		323				73				53		
10092(	3)		2016	2077		6230	336	372	1115		295	361	1082
10092(	5)		784				155				156		
10092(	7)		280				88				116		
10092(	10)		1562	1621		4862	216	302	906		194	300	901
10092(	12)		689				107				133		
10092(	14)		232				130				134		
10108(	3)		76	687		2061	107	442	1326		38	427	1282
10108(	5)		629				384				401		
10108(	7)		189				140				101		
10108(	10)		85	666		1997	112	413	1240		41	323	970
10108(	12)		580				339				297		
10108(	14)		223				149				86		
10062(	3)		257	393		1180	210	268	803		110	289	867
10062(	5)		310				202				258		
10062(	7)		107				61				74		
10062(	10)		184	415		1245	174	316	948		106	356	1069
10062(	12)		283				211				245		
10062(	14)		175				122				167		
10067(	3)		176	562		1685	156	375	1126		119	221	664
10067(	5)		326				229				150		
10067(	7)		301				179				85		

10067(	10)		118	485	1456		121	368	1105	99	225	676
10067(	12)		293				229			128		
10067(	14)		266				185			111		

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8511(	14)	1200	1479	4437	1061	2747	8240	1914	5345	16034
8511(	3)	625	1479	4437	1567	2747	8240	2806	5345	16034
8511(	5)	1046			1510			3078		
8511(	7)	608			1208			2399		
8089(	10)	811	892	2675	988	1072	3216	1651	1881	5642
8089(	12)	95			153			388		
8089(	14)	254			277			585		
8089(	3)	867	1106	3318	1276	1550	4650	2009	2348	7045
8089(	5)	250			222			182		
8089(	7)	452			603			858		
8090(	10)	49	197	591	79	255	766	121	418	1254
8090(	12)	112			182			372		
8090(	14)	112			113			117		
8090(	3)	110	459	1378	66	609	1826	122	837	2512
8090(	5)	442			598			829		
8090(	7)	77			76			79		
8091(	10)	93	161	483	114	204	612	134	326	978
8091(	12)	141			194			320		
8091(	14)	37			29			32		
8091(	3)	154	213	640	192	285	856	243	372	1117
8091(	5)	190			252			336		
8091(	7)	37			56			69		
8092(	10)	6	401	1203	14	536	1608	28	765	2296
8092(	12)	361			463			646		
8092(	14)	126			195			297		
8092(	3)	27	312	935	31	447	1341	31	791	2374
8092(	5)	244			384			705		
8092(	7)	139			161			257		
8093(	10)	23	60	180	24	100	300	27	196	588
8093(	12)	43			81			168		
8093(	14)	25			38			68		
8093(	3)	22	145	436	23	172	517	19	218	653
8093(	5)	135			162			203		
8093(	7)	36			39			55		
8094(	10)	158	235	704	264	355	1064	470	573	1718
8094(	12)	25			17			17		
8094(	14)	127			175			239		

8094(3)	305	325	974	391	418	1254	550	627	1882
8094(5)	24			21			24		
8094(7)	77			104			215		
9330(10)	82	418	1255	156	371	1114	356	772	2317
9330(12)	282			201			395		
9330(14)	215			191			396		
9330(3)	121	424	1271	184	299	898	396	534	1601
9330(5)	375			171			134		
9330(7)	121			122			234		
9331(10)	249	522	1567	249	611	1832	561	1358	4073
9331(12)	284			342			763		
9331(14)	255			311			688		
9331(3)	177	280	840	186	456	1369	350	992	2977
9331(5)	149			275			622		
9331(7)	116			221			488		
9332(10)	351	668	2005	479	692	2076	1094	1560	4679
9332(12)	527			323			753		
9332(14)	212			281			613		
9332(3)	289	639	1916	508	871	2614	1151	1850	5550
9332(5)	516			592			1107		
9332(7)	207			318			721		
9333(10)	557	825	2476	479	900	2701	1145	2036	6108
9333(12)	513			798			1822		
9333(14)	289			208			437		
9333(3)	594	741	2224	927	1090	3270	1858	2243	6729
9333(5)	464			757			1691		
9333(7)	202			233			461		
9334(10)	1023	1107	3320	1619	1645	4936	3793	3853	11558
9334(12)	155			66			50		
9334(14)	281			202			476		
9334(3)	1036	1073	3218	1572	1580	4740	3446	3450	10351
9334(5)	163			173			296		
9334(7)	183			107			114		
9335(10)	242	490	1469	361	691	2074	805	1630	4889
9335(12)	179			260			653		
9335(14)	278			378			897		
9335(3)	122	323	968	190	539	1616	441	1159	3476

9335(	5)	132					220			438		
9335(	7)	196					333			720		
9336(	10)	69	162		485		128		818	289	600	1800
9336(	12)	147					238			503		
9336(	14)	37					71			174		
9336(	3)	130	342		1027		156		1041	354	782	2347
9336(	5)	327					318			730		
9336(	7)	58					75			150		
9337(	10)	113	274		821		192		1365	438	1031	3093
9337(	12)	200					311			724		
9337(	14)	108					195			427		
9337(	3)	149	377		1130		210		1559	474	1185	3556
9337(	5)	216					333			746		
9337(	7)	191					240			559		

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10005(	15)	502	653	1958	495	686	2058	822	1192	3575
10006(	2)	506	643	1929	504	679	2038	841	1182	3547
10006(	3)	261	398	1194	469	644	1931	856	1197	3590
10006(	4)	261	398	1194	469	644	1931	856	1197	3590
10006(	5)	506	643	1929	504	679	2038	841	1182	3547
10006(	6)	137			175			341		
10006(	12)	178	315	945	210	385	1155	354	695	2085
10006(	13)	279	416	1249	214	389	1166	251	592	1776
10006(	14)	279	416	1249	214	389	1166	251	592	1776
10006(	15)	178	315	945	210	385	1155	354	695	2085
10033(	2)	45	319	957	36	257	772	79	294	883
10033(	3)	81	355	1064	60	281	843	87	302	907
10033(	4)	81	355	1064	60	281	843	87	302	907
10033(	5)	45	319	957	36	257	772	79	294	883
10033(	6)	274			221			215		
10033(	12)	107	381	1144	118	339	1016	270	485	1456
10033(	13)	88	362	1085	137	358	1074	277	492	1476
10033(	14)	88	362	1085	137	358	1074	277	492	1476
10033(	15)	107	381	1144	118	339	1016	270	485	1456
10034(	2)	240	444	1332	253	403	1209	417	585	1754
10034(	3)	236	440	1321	234	384	1153	466	634	1903
10034(	4)	236	440	1321	234	384	1153	466	634	1903
10034(	5)	240	444	1332	253	403	1209	417	585	1754
10034(	6)	204	408	1224	150			168		
10034(	12)	479	683	2049	348	498	1494	672	840	2521
10034(	13)	359	563	1690	322	472	1416	576	744	2231
10034(	14)	359	563	1690	322	472	1416	576	744	2231
10034(	15)	479	683	2049	348	498	1494	672	840	2521
10021(	2)	131	243	728	128	214	642	147	293	878
10021(	3)	201	313	940	199	285	856	241	387	1162
10021(	4)	201	313	940	199	285	856	241	387	1162
10021(	5)	131	243	728	128	214	642	147	293	878
10021(	6)	112			86			146		
10021(	12)	360	472	1415	342	428	1285	421	567	1700
10021(	13)	217	329	986	211	297	891	234	380	1139
10021(	14)	217	329	986	211	297	891	234	380	1139
10021(	15)	360	472	1415	342	428	1285	421	567	1700

10022(	2)		353	436	1308		336	370	1111		413	471	1413
10022(	3)		247	330	989		238	272	815		268	326	978
10022(	4)		247	330	989		238	272	815		268	326	978
10022(	5)		353	436	1308		336	370	1111		413	471	1413
10022(	6)		83				34				58		
10022(	12)		105	188	565		63	97	290		106	164	491
10022(	13)		744	827	2481		683	717	2150		780	838	2514
10022(	14)		744	827	2481		683	717	2150		780	838	2514
10022(	15)		105	188	565		63	97	290		106	164	491

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3988(	14)	166	1284	3853	66	548	1644	52	416	1249
3988(	3)	426			194			143		
3988(	5)	1223			530			401		
3988(	7)	229			81			66		
4005(	10)	250	547	1641	109	229	687	88	227	680
4005(	12)	383			176			149		
4005(	14)	220			80			104		
4005(	3)	166	480	1439	69	209	627	69	152	456
4005(	5)	354			159			125		
4005(	7)	198			83			47		
3865(	10)	432	830	2491	234	369	1107	193	394	1183
3865(	12)	715			272			341		
3865(	14)	214			115			103		
3865(	3)	332	672	2015	153	257	772	148	317	951
3865(	5)	657			244			309		
3865(	7)	69			38			36		
3868(	10)	386	672	2017	199	279	838	177	317	950
3868(	12)	668			273			314		
3868(	14)	34			22			21		
3868(	3)	527	728	2185	263	319	957	251	350	1050
3868(	5)	718			306			346		
3868(	7)	46			27			19		
3989(	10)	108	375	1126	61	261	783	62	272	816
3989(	12)	320			216			225		
3989(	14)	121			95			100		
3989(	3)	83	257	771	34	176	528	43	168	503
3989(	5)	182			113			115		
3989(	7)	114			94			81		
3972(	10)	87	525	1576	67	337	1011	67	341	1024
3972(	12)	473			311			323		
3972(	14)	152			84			71		
3972(	3)	201	534	1603	122	331	993	129	312	936
3972(	5)	396			268			276		
3972(	7)	214			115			81		
4139(	10)	876	2289	6866	564	1461	4382	532	1406	4217
4139(	12)	2277			1458			1403		
4139(	14)	126			48			44		

4139(	3)	956	2375	7124	594	1519	4558	557	1462	4385
4139(	5)	2321			1491			1438		
4139(	7)	276			163			147		
4140(	10)	822	2262	6786	523	1445	4336	508	1399	4196
4140(	12)	2254			1442			1396		
4140(	14)	107			54			46		
4140(	3)	733	2309	6928	473	1485	4454	473	1437	4310
4140(	5)	2273			1454			1405		
4140(	7)	238			177			176		
3821(	10)	888	901	2702	582	584	1752	574	575	1725
3821(	12)	595			367			342		
3821(	14)	61			22			16		
3821(	3)	821	829	2487	533	535	1604	530	531	1594
3821(	5)	455			269			240		
3821(	7)	54			23			22		
3822(	10)	801	809	2428	494	496	1489	472	475	1424
3822(	12)	330			133			119		
3822(	14)	65			27			29		
3822(	3)	866	928	2785	541	560	1681	519	535	1606
3822(	5)	372			160			133		
3822(	7)	186			87			82		
* ELEMENTS 3865, 3868, 3821, 3822 2024-T4 FTY=40000 PSI										

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APPENDIX E

RANDOM VIBRATION ACCELERATIONS & DISPLACEMENTS

(7% CRITICAL DAMPING $Q=7$)

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METSAT RANDOM VIBRATION ACCELERATIONS - TRANSMISSIBILITIES OF SELECTED ELEMENTS - X-LOAD													
COMPONENT	GRID	LOAD	X-RESPONSE			Y-RESPONSE			Z-RESPONSE				
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q		
LARGE MASS	11812	X	3414	8.84	1.00	0	0.00	0.00	0	0.00	0.00		
	1001	X	3436	8.90	1.01	2747	7.11	0.80	950	2.46	0.28		
	1172	X	2911	7.54	0.85	2867	7.43	0.84	3865	10.01	1.13		
	1019	X	3602	9.33	1.06	3043	7.88	0.89	1600	4.14	0.47		
	1205	X	2817	7.30	0.83	3441	8.91	1.01	2269	5.88	0.66		
	1124	X	2962	7.67	0.87	1355	3.51	0.40	3611	9.35	1.06		
LOWER MOTOR MOUNT	1001	X	3436	8.90	1.01	2747	7.11	0.80	950	2.46	0.28		
	1172	X	2911	7.54	0.85	2867	7.43	0.84	3865	10.01	1.13		
	2663	X	3285	8.51	0.96	2624	6.80	0.77	3856	9.99	1.13		
	2875	X	3637	9.42	1.07	2265	5.87	0.66	944	2.45	0.28		
	2855	X	8823	22.85	2.58	3117	8.07	0.91	3247	8.41	0.95		
	2861	X	5349	13.86	1.57	3074	7.96	0.90	1961	5.08	0.57		
	2888	X	2511	6.50	0.74	2989	7.74	0.88	6390	16.55	1.87		
	2892	X	2551	6.61	0.75	1739	4.51	0.51	4797	12.42	1.41		
	2896	X	2518	6.52	0.74	2620	6.78	0.77	5729	14.84	1.68		
	2884	X	2723	7.05	0.80	3307	8.57	0.97	6444	16.69	1.89		
UPPER MOTOR MOUNT	1578	X	3224	8.35	0.94	1700	4.40	0.50	845	2.19	0.25		
	1569	X	2947	7.63	0.86	1685	4.36	0.49	2501	6.48	0.73		
	2710	X	8874	22.99	2.60	2581	6.69	0.76	2891	7.49	0.85		
	2779	X	10451	27.07	3.06	2853	7.39	0.84	2534	6.56	0.74		
	2783	X	3342	8.65	0.98	2444	6.33	0.72	892	2.31	0.26		
	2764	X	3493	9.05	1.02	2330	6.03	0.68	1536	3.98	0.45		
	2696	X	2268	5.87	0.66	2754	7.13	0.81	8364	21.66	2.45		
	2700	X	2345	6.07	0.69	1691	4.38	0.50	5217	13.51	1.53		
	2704	X	2217	5.74	0.65	2071	5.36	0.61	5458	14.14	1.60		
	2692	X	2380	6.16	0.70	2801	7.25	0.82	6941	17.98	2.03		

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER FRONT PANEL	1455	X	3037	7.87	0.89	2303	5.97	0.67	1343	3.48	0.39
	1608	X	3127	8.10	0.92	2061	5.34	0.60	913	2.36	0.27
	1191	X	2875	7.45	0.84	1886	4.89	0.55	1447	3.75	0.42
	1005	X	3438	8.90	1.01	1659	4.30	0.49	803	2.08	0.24
	1979	X	1017	2.63	0.30	2057	5.33	0.60	11589	30.02	3.39
	1970	X	2250	5.83	0.66	1179	3.05	0.35	4457	11.54	1.31
	1973	X	969	2.51	0.28	2128	5.51	0.62	7353	19.04	2.15
	1976	X	1896	4.91	0.56	824	2.13	0.24	4535	11.75	1.33
LOWER AFT PANEL	1885	X	7494	19.41	2.20	1916	4.96	0.56	839	2.17	0.25
	1961	X	2928	7.58	0.86	2038	5.28	0.60	1420	3.68	0.42
	1963	X	3334	8.64	0.98	2273	5.89	0.67	1408	3.65	0.41
	1315	X	3056	7.92	0.90	3566	9.24	1.04	2564	6.64	0.75
	1215	X	3183	8.24	0.93	3482	9.02	1.02	1639	4.25	0.48
	1019	X	3602	9.33	1.06	3043	7.88	0.89	1600	4.14	0.47
UPPER BASEPLATE	1205	X	2817	7.30	0.83	3441	8.91	1.01	2269	5.88	0.66
	1260	X	3886	10.06	1.14	3483	9.02	1.02	2045	5.30	0.60
	1455	X	3037	7.87	0.89	2303	5.97	0.67	1343	3.48	0.39
	1608	X	3127	8.10	0.92	2061	5.34	0.60	913	2.36	0.27
	1468	X	3183	8.24	0.93	3513	9.10	1.03	1727	4.47	0.51
UPPER FRONT PANEL	1458	X	3056	7.92	0.90	3755	9.73	1.10	2753	7.13	0.81
	1375	X	3031	7.85	0.89	1024	2.65	0.30	1605	4.16	0.47
	1528	X	3299	8.54	0.97	1024	2.65	0.30	596	1.54	0.17
	1993	X	5093	13.19	1.49	2427	6.29	0.71	1757	4.55	0.51
	2124	X	3119	8.08	0.91	2495	6.46	0.73	567	1.47	0.17
	2047	X	1196	3.10	0.35	1934	5.01	0.57	4886	12.66	1.43
	2037	X	2404	6.23	0.70	1371	3.55	0.40	5048	13.07	1.48
	2050	X	1200	3.11	0.35	2361	6.12	0.69	6032	15.62	1.77
	2060	X	2183	5.65	0.64	1003	2.60	0.29	3851	9.98	1.13
	2078	X	10073	26.09	2.95	1176	3.05	0.34	822	2.13	0.24

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER AFT PANEL	1468	X	3183	8.24	0.93	3513	9.10	1.03	1727	4.47	0.51
	1458	X	3056	7.92	0.90	3755	9.73	1.10	2753	7.13	0.81
	2210	X	5094	13.19	1.49	2820	7.30	0.83	2995	7.76	0.88
	2240	X	3058	7.92	0.90	2861	7.41	0.84	1624	4.21	0.48
	2218	X	3010	7.80	0.88	3753	9.72	1.10	2478	6.42	0.73
	2223	X	3539	9.17	1.04	3674	9.52	1.08	2091	5.42	0.61
	2219	X	5652	14.64	1.66	3554	9.21	1.04	2520	6.53	0.74
	2224	X	6382	16.53	1.87	3505	9.08	1.03	2112	5.47	0.62
LOWER SHELF	1826	X	4017	10.40	1.18	2358	6.11	0.69	1610	4.17	0.47
	1828	X	4043	10.47	1.18	1968	5.10	0.58	1879	4.87	0.55
	1777	X	3753	9.72	1.10	2343	6.07	0.69	3086	7.99	0.90
	1779	X	3752	9.72	1.10	1967	5.09	0.58	2765	7.16	0.81
	1744	X	3497	9.06	1.02	2893	7.49	0.85	2559	6.63	0.75
	1767	X	3546	9.18	1.04	1330	3.44	0.39	2366	6.13	0.69
	1671	X	3170	8.21	0.93	1455	3.77	0.43	1636	4.24	0.48
	1641	X	3051	7.90	0.89	1897	4.91	0.56	1568	4.06	0.46
	1703	X	3306	8.56	0.97	1302	3.37	0.38	2394	6.20	0.70
	1699	X	3252	8.42	0.95	1664	4.31	0.49	2040	5.28	0.60
	1647	X	3195	8.28	0.94	2483	6.43	0.73	3190	8.26	0.93
	1631	X	3158	8.18	0.93	1944	5.03	0.57	2043	5.29	0.60
	1842	X	4083	10.57	1.20	3132	8.11	0.92	1389	3.60	0.41
	1776	X	3712	9.61	1.09	2564	6.64	0.75	3101	8.03	0.91
	1800	X	3773	9.77	1.11	1551	4.02	0.45	2245	5.81	0.66
	1827	X	4101	10.62	1.20	2205	5.71	0.65	1630	4.22	0.48
	1732	X	3435	8.90	1.01	1912	4.95	0.56	3382	8.76	0.99
	1718	X	3328	8.62	0.97	1481	3.84	0.43	2069	5.36	0.61
	1783	X	3641	9.43	1.07	1362	3.53	0.40	2141	5.55	0.63
	1853	X	4038	10.46	1.18	1311	3.40	0.38	741	1.92	0.22
	1858	X	4063	10.52	1.19	1817	4.71	0.53	971	2.52	0.28
	1805	X	3694	9.57	1.08	1441	3.73	0.42	2559	6.63	0.75
	1625	X	3200	8.29	0.94	3445	8.92	1.01	2121	5.49	0.62
	1694	X	3288	8.52	0.96	2796	7.24	0.82	3093	8.01	0.91

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER SHELF	2572	X	3444	8.92	1.01	2557	6.62	0.75	965	2.50	0.28
	2577	X	3440	8.91	1.01	2081	5.39	0.61	582	1.51	0.17
	2547	X	3153	8.17	0.92	2728	7.07	0.80	3399	8.80	1.00
	2551	X	3144	8.14	0.92	2211	5.73	0.65	1960	5.08	0.57
	2520	X	3027	7.84	0.89	2560	6.63	0.75	3785	9.80	1.11
	2525	X	3022	7.83	0.89	2085	5.40	0.61	1382	3.58	0.40
	2469	X	2920	7.56	0.86	2087	5.40	0.61	2325	6.02	0.68
	2464	X	2917	7.56	0.85	2568	6.65	0.75	4032	10.44	1.18
	2489	X	2933	7.60	0.86	2978	7.71	0.87	5411	14.02	1.58
	2420	X	2979	7.72	0.87	3306	8.56	0.97	5731	14.84	1.68
	2426	X	2980	7.72	0.87	2706	7.01	0.79	3705	9.60	1.09
	2355	X	3303	8.56	0.97	3197	8.28	0.94	3735	9.67	1.09
	2360	X	3265	8.46	0.96	2711	7.02	0.79	2701	7.00	0.79
	2300	X	3676	9.52	1.08	3061	7.93	0.90	2616	6.78	0.77
LOWER RIGHT FRONT SUP	2323	X	3622	9.38	1.06	2276	5.90	0.67	2322	6.02	0.68
	2318	X	3610	9.35	1.06	2580	6.68	0.76	2392	6.20	0.70
	2275	X	3899	10.10	1.14	2990	7.75	0.88	2381	6.17	0.70
	2241	X	4270	11.06	1.25	2583	6.69	0.76	2274	5.89	0.67
	2442	X	2940	7.61	0.86	2449	6.34	0.72	3601	9.33	1.05
	1176	X	2874	7.45	0.84	1880	4.87	0.55	1399	3.62	0.41
	1963	X	3334	8.64	0.98	2273	5.89	0.67	1408	3.65	0.41
	1172	X	2911	7.54	0.85	2867	7.43	0.84	3865	10.01	1.13
LOWER RIGHT PANEL	2663	X	3285	8.51	0.96	2624	6.80	0.77	3856	9.99	1.13
	2661	X	2955	7.65	0.87	9982	25.85	2.92	2332	6.04	0.68
	1379	X	2990	7.74	0.88	1876	4.86	0.55	1539	3.99	0.45
	1191	X	2875	7.45	0.84	1886	4.89	0.55	1447	3.75	0.42
	1205	X	2817	7.30	0.83	3441	8.91	1.01	2269	5.88	0.66
	1315	X	3056	7.92	0.90	3566	9.24	1.04	2564	6.64	0.75
	1455	X	3037	7.87	0.89	2303	5.97	0.67	1343	3.48	0.39

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER RIGHT FRONT SUP	1998	X	4025	10.43	1.18	1898	4.92	0.56	1558	4.03	0.46
	1569	X	2947	7.63	0.86	1685	4.36	0.49	2501	6.48	0.73
	2691	X	4078	10.56	1.19	2099	5.44	0.61	2756	7.14	0.81
	1519	X	2941	7.62	0.86	1031	2.67	0.30	1581	4.09	0.46
	2679	X	3404	8.82	1.00	5731	14.84	1.68	1774	4.59	0.52
UPPER RIGHT PANEL	1457	X	3056	7.92	0.90	3674	9.51	1.08	2671	6.92	0.78
	2154	X	3682	9.54	1.08	3675	9.52	1.08	2283	5.91	0.67
	2130	X	3654	9.47	1.07	6503	16.84	1.90	1803	4.67	0.53
	1345	X	3047	7.89	0.89	2282	5.91	0.67	2145	5.55	0.63
	1365	X	3031	7.85	0.89	1120	2.90	0.33	1693	4.39	0.50
	2210	X	5094	13.19	1.49	2820	7.30	0.83	2995	7.76	0.88
	1993	X	5093	13.19	1.49	2427	6.29	0.71	1757	4.55	0.51
	1375	X	3031	7.85	0.89	1024	2.65	0.30	1605	4.16	0.47
TOP PANEL	11025	X	4388	11.36	1.29	2561	6.63	0.75	4143	10.73	1.21
	11038	X	4406	11.41	1.29	2938	7.61	0.86	1536	3.98	0.45
	11175	X	3323	8.61	0.97	3362	8.71	0.98	1534	3.97	0.45
	11170	X	13764	35.65	4.03	3336	8.64	0.98	1867	4.84	0.55
	2627	X	2974	7.70	0.87	1493	3.87	0.44	3836	9.94	1.12
	11128	X	10072	26.09	2.95	3343	8.66	0.98	1631	4.22	0.48
	2210	X	5094	13.19	1.49	2820	7.30	0.83	2995	7.76	0.88
	1993	X	5093	13.19	1.49	2427	6.29	0.71	1757	4.55	0.51
LEFT PANEL	3243	X	3013	7.80	0.88	11124	28.81	3.26	1000	2.59	0.29
	3251	X	3061	7.93	0.90	4570	11.84	1.34	659	1.71	0.19
	1001	X	3436	8.90	1.01	2747	7.11	0.80	950	2.46	0.28
	1019	X	3602	9.33	1.06	3043	7.88	0.89	1600	4.14	0.47
	1608	X	3127	8.10	0.92	2061	5.34	0.60	913	2.36	0.27
	2124	X	3119	8.08	0.91	2495	6.46	0.73	567	1.47	0.17
	2240	X	3058	7.92	0.90	2861	7.41	0.84	1624	4.21	0.48

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER LEFT SHIELD	1878	X	3619	9.37	1.06	1816	4.70	0.53	833	2.16	0.24
	2829	X	3549	9.19	1.04	2193	5.68	0.64	932	2.41	0.27
	1840	X	3839	9.94	1.12	1902	4.93	0.56	849	2.20	0.25
	2831	X	3719	9.63	1.09	2445	6.33	0.72	1572	4.07	0.46
	2913	X	3588	9.29	1.05	1634	4.23	0.48	2578	6.68	0.76
LOWER RIGHT SHIELD	1938	X	3294	8.53	0.96	2164	5.61	0.63	1213	3.14	0.36
	2835	X	3420	8.86	1.00	2625	6.80	0.77	3228	8.36	0.95
	2901	X	3292	8.53	0.96	2449	6.34	0.72	2386	6.18	0.70
	1963	X	3334	8.64	0.98	2273	5.89	0.67	1408	3.65	0.41
	2663	X	3285	8.51	0.96	2624	6.80	0.77	3856	9.99	1.13
UPPER LEFT SHIELD	2119	X	3331	8.63	0.98	2043	5.29	0.60	590	1.53	0.17
	2083	X	2963	7.67	0.87	2134	5.53	0.63	797	2.06	0.23
	2763	X	3185	8.25	0.93	2201	5.70	0.64	887	2.30	0.26
	2760	X	3243	8.40	0.95	2255	5.84	0.66	1550	4.01	0.45
	2933	X	3082	7.98	0.90	1810	4.69	0.53	3696	9.57	1.08
UPPER RIGHT SHIELD	2010	X	3959	10.26	1.16	1894	4.91	0.55	1506	3.90	0.44
	2918	X	4172	10.81	1.22	2102	5.44	0.62	2686	6.96	0.79
	1998	X	4025	10.43	1.18	1898	4.92	0.56	1558	4.03	0.46
	2691	X	4078	10.56	1.19	2099	5.44	0.61	2756	7.14	0.81
LOWER CARD CAGE	3673	X	4933	12.78	1.45	3029	7.84	0.89	2537	6.57	0.74
	3662	X	4468	11.57	1.31	5505	14.26	1.61	2139	5.54	0.63
	3671	X	5868	15.20	1.72	3011	7.80	0.88	2873	7.44	0.84
	3660	X	5895	15.27	1.73	5427	14.06	1.59	5713	14.80	1.67
	3655	X	2820	7.30	0.83	3160	8.18	0.93	1952	5.06	0.57
	3650	X	3348	8.67	0.98	3055	7.91	0.89	2653	6.87	0.78
	1179	X	2842	7.36	0.83	1565	4.05	0.46	1998	5.17	0.59
	1084	X	3127	8.10	0.92	1425	3.69	0.42	2099	5.44	0.61
	3735	X	5246	13.59	1.54	6262	16.22	1.83	1944	5.03	0.57
	3730	X	4927	12.76	1.44	3688	9.55	1.08	2211	5.73	0.65
	3764	X	4551	11.79	1.33	6268	16.23	1.84	2003	5.19	0.59

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER CARD CAGE	3711	X	3673	9.51	1.08	6941	17.98	2.03	2729	7.07	0.80
	3708	X	3562	9.23	1.04	4965	12.86	1.45	2301	5.96	0.67
	3753	X	3454	8.95	1.01	2169	5.62	0.64	2095	5.43	0.61
LOWER CARD CAGE CARDS	4845	X	6524	16.90	1.91	2887	7.48	0.85	3901	10.10	1.14
	4822	X	4642	12.02	1.36	3673	9.51	1.08	2036	5.27	0.60
	4826	X	5647	14.63	1.65	5113	13.24	1.50	10795	27.96	3.16
	4813	X	2801	7.25	0.82	5453	14.12	1.60	10936	28.33	3.20
	4817	X	3465	8.97	1.01	1919	4.97	0.56	1988	5.15	0.58
	4777	X	3453	8.94	1.01	1910	4.95	0.56	2036	5.27	0.60
	4725	X	6700	17.35	1.96	2705	7.01	0.79	1879	4.87	0.55
	4765	X	6764	17.52	1.98	2883	7.47	0.84	1826	4.73	0.53
UPPER CARD CAGE	1469	X	3013	7.80	0.88	2894	7.50	0.85	2037	5.28	0.60
	1509	X	2998	7.77	0.88	1122	2.91	0.33	1746	4.52	0.51
	1514	X	3041	7.88	0.89	1123	2.91	0.33	5177	13.41	1.52
	1474	X	3162	8.19	0.93	2906	7.53	0.85	4874	12.63	1.43
	3372	X	3781	9.79	1.11	4228	10.95	1.24	2135	5.53	0.63
	3381	X	4490	11.63	1.32	4236	10.97	1.24	4878	12.63	1.43
	3404	X	4580	11.86	1.34	3887	10.07	1.14	5262	13.63	1.54
	3395	X	3905	10.11	1.14	3840	9.95	1.12	1913	4.95	0.56
	2249	X	4183	10.83	1.23	2815	7.29	0.82	2328	6.03	0.68
	2448	X	2927	7.58	0.86	2798	7.25	0.82	4409	11.42	1.29
	3369	X	4133	10.70	1.21	3853	9.98	1.13	4064	10.53	1.19
	11836	X	3881	10.05	1.14	3586	9.29	1.05	4259	11.03	1.25
UPPER CARD CAGE CARDS	11251	X	4457	11.54	1.31	3489	9.04	1.02	5324	13.79	1.56
	11829	X	2996	7.76	0.88	2579	6.68	0.76	4309	11.16	1.26
	11203	X	3195	8.28	0.94	1773	4.59	0.52	5493	14.23	1.61
	11879	X	11250	29.14	3.30	2828	7.33	0.83	4677	12.11	1.37
	11312	X	11127	28.82	3.26	2760	7.15	0.81	4653	12.05	1.36

COMPONENT	GRID	LOAD	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER WARMLOAD		DIR									
	1945	X	3837	9.94	1.12	2054	5.32	0.60	1252	3.24	0.37
	1929	X	7352	19.04	2.15	2010	5.21	0.59	1122	2.91	0.33
	2812	X	10017	25.94	2.93	2536	6.57	0.74	2073	5.37	0.61
	2810	X	5394	13.97	1.58	2523	6.54	0.74	1587	4.11	0.46
	1892	X	7935	20.55	2.32	1847	4.78	0.54	837	2.17	0.25
	1908	X	5589	14.48	1.64	1864	4.83	0.55	909	2.36	0.27
	2814	X	3440	8.91	1.01	2644	6.85	0.77	2947	7.63	0.86
	2815	X	4175	10.81	1.22	2624	6.80	0.77	3400	8.81	1.00
	3006	X	7012	18.16	2.05	5959	15.43	1.75	6343	16.43	1.86
UPPER WARMLOAD	3036	X	4114	10.65	1.20	6290	16.29	1.84	6967	18.05	2.04
	2009	X	3984	10.32	1.17	1606	4.16	0.47	1553	4.02	0.45
	2033	X	4383	11.35	1.28	1604	4.15	0.47	1378	3.57	0.40
	2080	X	4553	11.79	1.33	1538	3.98	0.45	841	2.18	0.25
	2056	X	4624	11.98	1.35	1565	4.05	0.46	1007	2.61	0.29
	2939	X	4026	10.43	1.18	1912	4.95	0.56	1591	4.12	0.47
	2941	X	4550	11.79	1.33	2549	6.60	0.75	2973	7.70	0.87
	2738	X	3882	10.06	1.14	1970	5.10	0.58	2668	6.91	0.78
	2739	X	4574	11.85	1.34	1971	5.10	0.58	2463	6.38	0.72
LOWER REFLECTOR	2976	X	4434	11.49	1.30	4244	10.99	1.24	3733	9.67	1.09
	2945	X	4018	10.41	1.18	3958	10.25	1.16	2349	6.08	0.69
	4662	X	4982	12.90	1.46	2779	7.20	0.81	3293	8.53	0.96
	4085	X	3340	8.65	0.98	2736	7.09	0.80	2539	6.58	0.74
	4087	X	3563	9.23	1.04	3520	9.12	1.03	2881	7.46	0.84
	4176	X	6026	15.61	1.77	12434	32.21	3.64	10565	27.36	3.09
	4096	X	22346	57.88	6.55	18779	48.64	5.50	20965	54.30	6.14
	5591	X	6596	17.08	1.93	2916	7.55	0.85	1949	5.05	0.57
POWER CNTRL/MON BKT	5600	X	7567	19.60	2.22	3194	8.27	0.94	1947	5.04	0.57
	5590	X	5501	14.25	1.61	3420	8.86	1.00	1955	5.06	0.57
	11803	X	6286	16.28	1.84	26708	69.17	7.82	5786	14.99	1.69

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
POWER CNTRL/MON PWB	5878	X	6784	17.57	1.99	5352	13.86	1.57	3777	9.78	1.11
	6204	X	10021	25.95	2.94	5049	13.08	1.48	4191	10.85	1.23
PWR CNTRL/MON STANDOFF	6247	X	3448	8.93	1.01	5525	14.31	1.62	4563	11.82	1.34
	6015	X	7615	19.72	2.23	5541	14.35	1.62	3622	9.38	1.06
	5932	X	3048	7.90	0.89	5721	14.82	1.68	3655	9.47	1.07
	5999	X	6830	17.69	2.00	4753	12.31	1.39	3800	9.84	1.11
RADIATOR PANEL	10963	X	13763	35.65	4.03	3403	8.81	1.00	2409	6.24	0.71
	10968	X	3321	8.60	0.97	3285	8.51	0.96	1615	4.18	0.47
	10974	X	7729	20.02	2.26	1461	3.78	0.43	1490	3.86	0.44
	10969	X	8492	21.99	2.49	1450	3.76	0.42	1286	3.33	0.38
	10917	X	6062	15.70	1.78	1695	4.39	0.50	1779	4.61	0.52
SIDEMOUNT	8313	X	3414	8.84	1.00	0	0.00	0.00	0	0.00	0.00
	8229	X	3292	8.53	0.96	469	1.22	0.14	715	1.85	0.21
	7796	X	2636	6.83	0.77	2043	5.29	0.60	934	2.42	0.27
	7840	X	3414	8.84	1.00	0	0.00	0.00	0	0.00	0.00
	8178	X	2606	6.75	0.76	1849	4.79	0.54	2504	6.49	0.73
	9338	X	3368	8.72	0.99	1093	2.83	0.32	1788	4.63	0.52
	9576	X	3414	8.84	1.00	0	0.00	0.00	0	0.00	0.00
	7508	X	3402	8.81	1.00	1187	3.07	0.35	39	0.10	0.01
UPPER REFLECTOR	7240	X	3414	8.84	1.00	0	0.00	0.00	0	0.00	0.00
	4629	X	7652	19.82	2.24	3377	8.75	0.99	3767	9.76	1.10
	4399	X	4458	11.55	1.31	2400	6.22	0.70	2287	5.92	0.67
	4401	X	4835	12.52	1.42	2710	7.02	0.79	3186	8.25	0.93
	4490	X	7869	20.38	2.31	9726	25.19	2.85	9642	24.97	2.82
	4410	X	21802	56.47	6.39	18599	48.17	5.45	24175	62.61	7.08

METSAT RANDOM VIBRATION ACCELERATIONS - TRANSMISSIBILITIES OF SELECTED ELEMENTS - Y-LOAD												
COMPONENT	GRID	LOAD	X-RESPONSE			Y-RESPONSE			Z-RESPONSE			
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q	
LARGE MASS	11812	Y	0	0.00	0.00	3414	8.84	1.00	0	0.00	0.00	
LOWER BASEPLATE	1001	Y	526	1.36	0.15	5307	13.74	1.55	776	2.01	0.23	
	1172	Y	2031	5.26	0.59	5487	14.21	1.61	4828	12.50	1.41	
	1019	Y	621	1.61	0.18	3827	9.91	1.12	1492	3.86	0.44	
	1205	Y	1763	4.57	0.52	4108	10.64	1.20	3158	8.18	0.93	
	1124	Y	1441	3.73	0.42	4428	11.47	1.30	6021	15.59	1.76	
LOWER MOTOR MOUNT	1001	Y	526	1.36	0.15	5307	13.74	1.55	776	2.01	0.23	
	1172	Y	2031	5.26	0.59	5487	14.21	1.61	4828	12.50	1.41	
	2663	Y	1846	4.78	0.54	6019	15.59	1.76	4877	12.63	1.43	
	2875	Y	584	1.51	0.17	5840	15.13	1.71	782	2.02	0.23	
	2855	Y	3804	9.85	1.11	7523	19.49	2.20	4231	10.96	1.24	
	2861	Y	1998	5.17	0.59	7482	19.38	2.19	2482	6.43	0.73	
	2888	Y	3213	8.32	0.94	7288	18.88	2.13	1938	5.02	0.57	
	2892	Y	6183	16.02	1.81	1951	5.05	0.57	2851	7.38	0.84	
	2896	Y	3128	8.10	0.92	5813	15.06	1.70	1637	4.24	0.48	
	2884	Y	6509	16.86	1.91	4391	11.37	1.29	3282	8.50	0.96	
UPPER MOTOR MOUNT	1578	Y	631	1.63	0.18	4298	11.13	1.26	917	2.38	0.27	
	1569	Y	1809	4.68	0.53	4328	11.21	1.27	3068	7.95	0.90	
	2710	Y	4092	10.60	1.20	3302	8.55	0.97	3218	8.33	0.94	
	2779	Y	4186	10.84	1.23	3179	8.23	0.93	2760	7.15	0.81	
	2783	Y	1375	3.56	0.40	3064	7.94	0.90	913	2.36	0.27	
	2764	Y	1551	4.02	0.45	3361	8.71	0.98	1632	4.23	0.48	
	2696	Y	2440	6.32	0.71	3220	8.34	0.94	3164	8.19	0.93	
	2700	Y	3374	8.74	0.99	1775	4.80	0.52	2560	6.63	0.75	
	2704	Y	2414	6.25	0.71	3690	9.56	1.08	2701	7.00	0.79	
	2692	Y	3422	8.86	1.00	3092	8.01	0.91	3251	8.42	0.95	

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER FRONT PANEL	1455	Y	1855	4.80	0.54	4378	11.34	1.28	3144	8.14	0.92
	1608	Y	843	2.18	0.25	4037	10.46	1.18	1467	3.80	0.43
	1191	Y	2151	5.57	0.63	5241	13.57	1.54	2918	7.56	0.85
	1005	Y	520	1.35	0.15	4942	12.80	1.45	1398	3.62	0.41
	1979	Y	2348	6.08	0.69	5019	13.00	1.47	3385	8.77	0.99
	1970	Y	5234	13.56	1.53	2442	6.33	0.72	2057	5.33	0.60
	1973	Y	1995	5.17	0.58	4523	11.71	1.32	2902	7.52	0.85
	1976	Y	4555	11.80	1.33	1956	5.07	0.57	1253	3.25	0.37
LOWER AFT PANEL	1885	Y	2081	5.39	0.61	4737	12.27	1.39	1558	4.04	0.46
	1961	Y	1425	3.69	0.42	5333	13.81	1.56	2914	7.55	0.85
	1963	Y	1877	4.86	0.55	5379	13.93	1.58	2934	7.60	0.86
	1315	Y	2156	5.58	0.63	3352	8.68	0.98	3430	8.88	1.00
	1215	Y	470	1.22	0.14	3306	8.56	0.97	1424	3.69	0.42
	1019	Y	621	1.61	0.18	3827	9.91	1.12	1492	3.86	0.44
	1205	Y	1763	4.57	0.52	4108	10.64	1.20	3158	8.18	0.93
	1260	Y	1412	3.66	0.41	3848	9.97	1.13	2333	6.04	0.68
UPPER BASEPLATE	1455	Y	1855	4.80	0.54	4378	11.34	1.28	3144	8.14	0.92
	1608	Y	843	2.18	0.25	4037	10.46	1.18	1467	3.80	0.43
	1468	Y	470	1.22	0.14	3236	8.38	0.95	1450	3.76	0.42
	1458	Y	2156	5.58	0.63	3332	8.63	0.98	3489	9.04	1.02
	1375	Y	2037	5.28	0.60	3997	10.35	1.17	3703	9.59	1.08
	1528	Y	493	1.28	0.14	3862	10.00	1.13	1045	2.71	0.31
	1993	Y	3133	8.12	0.92	3100	8.03	0.91	3801	9.84	1.11
	2124	Y	1522	3.94	0.45	3160	8.18	0.93	1070	2.77	0.31
UPPER FRONT PANEL	2047	Y	2669	6.91	0.78	3439	8.91	1.01	3153	8.17	0.92
	2037	Y	3498	9.06	1.02	3184	8.25	0.93	3817	9.89	1.12
	2050	Y	2700	6.99	0.79	3280	8.50	0.96	7377	19.11	2.16
	2060	Y	3460	8.96	1.01	2210	5.72	0.65	3618	9.37	1.06
	2078	Y	9343	24.20	2.74	3523	9.12	1.03	1778	4.61	0.52

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER AFT PANEL	1468	Y	470	1.22	0.14	3236	8.38	0.95	1450	3.76	0.42
	1458	Y	2156	5.58	0.63	3332	8.63	0.98	3489	9.04	1.02
	2210	Y	3153	8.17	0.92	3091	8.01	0.91	3700	9.58	1.08
	2240	Y	1522	3.94	0.45	3080	7.98	0.90	1446	3.75	0.42
	2218	Y	1498	3.88	0.44	3281	8.50	0.96	2849	7.38	0.83
	2223	Y	1096	2.84	0.32	3247	8.41	0.95	2159	5.59	0.63
	2219	Y	1466	3.80	0.43	2910	7.54	0.85	2879	7.46	0.84
	2224	Y	1429	3.70	0.42	2896	7.50	0.85	2166	5.61	0.63
LOWER SHELF	1826	Y	717	1.86	0.21	4543	11.77	1.33	2450	6.35	0.72
	1828	Y	728	1.89	0.21	4733	12.26	1.39	3996	10.35	1.17
	1777	Y	922	2.39	0.27	4538	11.75	1.33	4693	12.16	1.37
	1779	Y	924	2.39	0.27	4730	12.25	1.39	5964	15.45	1.75
	1744	Y	1208	3.13	0.35	4252	11.01	1.25	2544	6.59	0.75
	1767	Y	1071	2.77	0.31	5125	13.27	1.50	4078	10.56	1.19
	1671	Y	1732	4.49	0.51	5013	12.98	1.47	3360	8.70	0.98
	1641	Y	1856	4.81	0.54	5514	14.28	1.62	3568	9.24	1.05
	1703	Y	1492	3.86	0.44	5260	13.62	1.54	6457	16.72	1.89
	1699	Y	1545	4.00	0.45	4871	12.62	1.43	3053	7.91	0.89
	1647	Y	1801	4.67	0.53	4461	11.55	1.31	4829	12.51	1.41
	1631	Y	1947	5.04	0.57	4723	12.23	1.38	3263	8.45	0.96
	1842	Y	634	1.64	0.19	4101	10.62	1.20	1264	3.27	0.37
	1776	Y	964	2.50	0.28	4425	11.46	1.30	3718	9.63	1.09
	1800	Y	912	2.36	0.27	4960	12.85	1.45	5405	14.00	1.58
	1827	Y	690	1.79	0.20	4622	11.97	1.35	2693	6.97	0.79
	1732	Y	1259	3.26	0.37	4744	12.29	1.39	5844	15.14	1.71
	1718	Y	1406	3.64	0.41	4982	12.90	1.46	3536	9.16	1.04
	1783	Y	993	2.57	0.29	5089	13.18	1.49	4387	11.36	1.28
	1853	Y	760	1.97	0.22	5138	13.31	1.50	1170	3.03	0.34
	1858	Y	963	2.50	0.28	4758	12.32	1.39	1547	4.01	0.45
	1805	Y	884	2.29	0.26	5166	13.38	1.51	2281	5.91	0.67
	1625	Y	2021	5.23	0.59	4019	10.41	1.18	3076	7.97	0.90
	1694	Y	1538	3.98	0.45	4312	11.17	1.26	3761	9.74	1.10

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER SHELF	2572	Y	1229	3.18	0.36	3640	9.43	1.07	979	2.54	0.29
	2577	Y	1246	3.23	0.37	3544	9.18	1.04	1054	2.73	0.31
	2547	Y	1307	3.38	0.38	3664	9.49	1.07	3210	8.32	0.94
	2551	Y	1307	3.39	0.38	3584	9.28	1.05	1996	5.17	0.58
	2520	Y	1390	3.60	0.41	3643	9.44	1.07	3706	9.60	1.09
	2525	Y	1384	3.59	0.41	3546	9.19	1.04	1704	4.41	0.50
	2469	Y	1658	4.30	0.49	3547	9.19	1.04	2428	6.29	0.71
	2464	Y	1674	4.33	0.49	3651	9.46	1.07	3525	9.13	1.03
	2489	Y	1536	3.98	0.45	3692	9.56	1.08	5051	13.08	1.48
	2420	Y	1873	4.85	0.55	3698	9.58	1.08	5116	13.25	1.50
	2426	Y	1871	4.85	0.55	3662	9.48	1.07	3078	7.97	0.90
	2355	Y	2231	5.78	0.65	3687	9.55	1.08	3711	9.61	1.09
	2360	Y	2200	5.70	0.64	3667	9.50	1.07	2700	6.99	0.79
	2300	Y	2494	6.46	0.73	3686	9.55	1.08	3205	8.30	0.94
LOWER RIGHT FRONT SUP	2323	Y	2464	6.38	0.72	3603	9.33	1.06	3619	9.37	1.06
	2318	Y	2453	6.35	0.72	3673	9.51	1.08	3123	8.09	0.91
	2275	Y	2627	6.80	0.77	3686	9.55	1.08	3268	8.47	0.96
	2241	Y	2830	7.33	0.83	3675	9.52	1.08	3716	9.63	1.09
	2442	Y	1780	4.61	0.52	3650	9.45	1.07	3061	7.93	0.90
	1176	Y	2036	5.27	0.60	5231	13.55	1.53	2884	7.47	0.84
	1963	Y	1877	4.86	0.55	5379	13.93	1.58	2934	7.60	0.86
	1172	Y	2031	5.26	0.59	5487	14.21	1.61	4828	12.50	1.41
	2663	Y	1846	4.78	0.54	6019	15.59	1.76	4877	12.63	1.43
	2661	Y	1084	2.81	0.32	9905	25.65	2.90	2778	7.20	0.81
LOWER RIGHT PANEL	1379	Y	1985	5.14	0.58	4567	11.83	1.34	3632	9.41	1.06
	1191	Y	2151	5.57	0.63	5241	13.57	1.54	2918	7.56	0.85
	1205	Y	1763	4.57	0.52	4108	10.64	1.20	3158	8.18	0.93
	1315	Y	2156	5.58	0.63	3352	8.68	0.98	3430	8.88	1.00
	1455	Y	1855	4.80	0.54	4378	11.34	1.28	3144	8.14	0.92

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER RIGHT FRONT SUP	1998	Y	1528	3.96	0.45	3515	9.10	1.03	3542	9.18	1.04
	1569	Y	1809	4.68	0.53	4328	11.21	1.27	3068	7.95	0.90
	2691	Y	1560	4.04	0.46	3647	9.45	1.07	3142	8.14	0.92
	1519	Y	1884	4.88	0.55	4000	10.36	1.17	3529	9.14	1.03
	2679	Y	1561	4.04	0.46	24647	63.84	7.22	3238	8.39	0.95
UPPER RIGHT PANEL	1457	Y	2156	5.58	0.63	3340	8.65	0.98	3463	8.97	1.01
	2154	Y	2528	6.55	0.74	5269	13.65	1.54	3674	9.52	1.08
	2130	Y	2537	6.57	0.74	8716	22.57	2.55	3734	9.67	1.09
	1345	Y	2136	5.53	0.63	3573	9.25	1.05	3556	9.21	1.04
	1365	Y	2055	5.32	0.60	3917	10.15	1.15	3676	9.52	1.08
	2210	Y	3153	8.17	0.92	3091	8.01	0.91	3700	9.58	1.08
	1993	Y	3133	8.12	0.92	3100	8.03	0.91	3801	9.84	1.11
	1375	Y	2037	5.28	0.60	3997	10.35	1.17	3703	9.59	1.08
TOP PANEL	11025	Y	1793	4.64	0.53	3163	8.19	0.93	3037	7.87	0.89
	11038	Y	1774	4.59	0.52	3093	8.01	0.91	1390	3.60	0.41
	11175	Y	532	1.38	0.16	3352	8.68	0.98	1420	3.68	0.42
	11170	Y	3914	10.14	1.15	3356	8.69	0.98	1361	3.52	0.40
	2627	Y	1934	5.01	0.57	2912	7.54	0.85	5439	14.09	1.59
	11128	Y	3257	8.44	0.95	2827	7.32	0.83	1390	3.60	0.41
	2210	Y	3153	8.17	0.92	3091	8.01	0.91	3700	9.58	1.08
	1993	Y	3133	8.12	0.92	3100	8.03	0.91	3801	9.84	1.11
LEFT PANEL	3243	Y	615	1.59	0.18	15391	39.87	4.51	1132	2.93	0.33
	3251	Y	712	1.84	0.21	15809	40.95	4.63	962	2.49	0.28
	1001	Y	526	1.36	0.15	5307	13.74	1.55	776	2.01	0.23
	1019	Y	621	1.61	0.18	3827	9.91	1.12	1492	3.86	0.44
	1608	Y	843	2.18	0.25	4037	10.46	1.18	1467	3.80	0.43
	2124	Y	1522	3.94	0.45	3160	8.18	0.93	1070	2.77	0.31
	2240	Y	1522	3.94	0.45	3080	7.98	0.90	1446	3.75	0.42

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER LEFT SHIELD	1878	Y	517	1.34	0.15	4538	11.75	1.33	1382	3.58	0.40
	2829	Y	505	1.31	0.15	5475	14.18	1.60	769	1.99	0.23
	1840	Y	851	2.20	0.25	4731	12.25	1.39	1743	4.51	0.51
	2831	Y	1358	3.52	0.40	5860	15.18	1.72	1706	4.42	0.50
	2913	Y	726	1.88	0.21	5349	13.85	1.57	2133	5.52	0.62
LOWER RIGHT SHIELD	1938	Y	2290	5.93	0.67	5278	13.67	1.55	2636	6.83	0.77
	2835	Y	1872	4.85	0.55	5983	15.50	1.75	4226	10.94	1.24
	2901	Y	1940	5.02	0.57	5852	15.16	1.71	3152	8.16	0.92
	1963	Y	1877	4.86	0.55	5379	13.93	1.58	2934	7.60	0.86
	2863	Y	1846	4.78	0.54	6019	15.59	1.76	4877	12.63	1.43
UPPER LEFT SHIELD	2119	Y	1191	3.08	0.35	3424	8.87	1.00	1080	2.80	0.32
	2083	Y	1454	3.77	0.43	3532	9.15	1.03	1777	4.60	0.52
	2763	Y	1146	2.97	0.34	3336	8.64	0.98	909	2.35	0.27
	2760	Y	1574	4.08	0.46	3415	8.84	1.00	1630	4.22	0.48
	2933	Y	1279	3.31	0.37	3442	8.91	1.01	3329	8.62	0.98
UPPER RIGHT SHIELD	2010	Y	1504	3.89	0.44	3513	9.10	1.03	3413	8.84	1.00
	2918	Y	1578	4.09	0.46	3645	9.44	1.07	3034	7.86	0.89
	1998	Y	1528	3.96	0.45	3515	9.10	1.03	3542	9.18	1.04
	2691	Y	1560	4.04	0.46	3647	9.45	1.07	3142	8.14	0.92
LOWER CARD CAGE	3673	Y	1645	4.26	0.48	3998	10.36	1.17	3315	8.59	0.97
	3662	Y	1248	3.23	0.37	4553	11.79	1.33	3125	8.09	0.92
	3671	Y	2607	6.75	0.76	3984	10.32	1.17	3773	9.77	1.11
	3660	Y	3099	8.03	0.91	4590	11.89	1.34	4986	12.91	1.46
	3655	Y	1743	4.51	0.51	4077	10.56	1.19	3313	8.58	0.97
	3650	Y	1098	2.84	0.32	3987	10.33	1.17	3391	8.78	0.99
	1179	Y	2044	5.29	0.60	4770	12.35	1.40	3296	8.54	0.97
	1084	Y	1065	2.76	0.31	4678	12.12	1.37	3034	7.86	0.89
	3735	Y	1431	3.71	0.42	9193	23.81	2.69	2835	7.34	0.83
	3730	Y	1256	3.25	0.37	11104	28.76	3.25	4485	11.62	1.31
	3764	Y	1600	4.14	0.47	9544	24.72	2.80	3045	7.89	0.89

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER CARD CAGE	3711	Y	977	2.53	0.29	11267	29.18	3.30	3234	8.38	0.95
	3708	Y	911	2.36	0.27	11631	30.12	3.41	3338	8.65	0.98
	3753	Y	1248	3.23	0.37	12825	33.22	3.76	3178	8.23	0.93
LOWER CARD CAGE CARDS	4845	Y	2016	5.22	0.59	4310	11.16	1.26	3114	8.06	0.91
	4822	Y	1270	3.29	0.37	4284	11.10	1.25	3770	9.77	1.10
	4826	Y	2835	7.34	0.83	4531	11.74	1.33	4961	12.85	1.45
	4813	Y	1885	4.88	0.55	5046	13.07	1.48	4951	12.82	1.45
	4817	Y	1083	2.81	0.32	4473	11.59	1.31	3521	9.12	1.03
	4777	Y	1082	2.80	0.32	4513	11.69	1.32	3443	8.92	1.01
	4725	Y	1164	3.02	0.34	4139	10.72	1.21	3070	7.95	0.90
	4765	Y	1266	3.28	0.37	4204	10.89	1.23	3030	7.85	0.89
UPPER CARD CAGE	1469	Y	2099	5.44	0.61	3456	8.95	1.01	3347	8.67	0.98
	1509	Y	2009	5.20	0.59	3917	10.15	1.15	3746	9.70	1.10
	1514	Y	1113	2.88	0.33	3881	10.05	1.14	6788	17.58	1.99
	1474	Y	1114	2.89	0.33	3456	8.95	1.01	6309	16.34	1.85
	3372	Y	2617	6.78	0.77	4190	10.85	1.23	3450	8.94	1.01
	3381	Y	2397	6.21	0.70	4202	10.88	1.23	6304	16.33	1.85
	3404	Y	2513	6.51	0.74	5568	14.42	1.63	6887	17.84	2.02
	3395	Y	2666	6.91	0.78	5523	14.31	1.62	3838	9.94	1.12
	2249	Y	2783	7.21	0.82	3683	9.54	1.08	3566	9.24	1.04
	2448	Y	1736	4.50	0.51	3667	9.50	1.07	3788	9.81	1.11
	3369	Y	2345	6.07	0.69	4403	11.40	1.29	3436	8.90	1.01
UPPER CARD CAGE CARDS	11836	Y	2664	6.90	0.78	4508	11.68	1.32	6482	16.79	1.90
	11251	Y	2430	6.29	0.71	4816	12.47	1.41	7096	18.38	2.08
	11829	Y	2049	5.31	0.60	4533	11.74	1.33	6550	16.97	1.92
	11203	Y	1136	2.94	0.33	3759	9.74	1.10	7321	18.96	2.14
	11879	Y	3039	7.87	0.89	4319	11.19	1.27	6682	17.31	1.96
	11312	Y	3029	7.84	0.89	4429	11.47	1.30	6493	16.82	1.90

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER WARMLOAD	1945	Y	3771	9.77	1.10	5294	13.71	1.55	2706	7.01	0.79
	1929	Y	4549	11.78	1.33	5224	13.53	1.53	2549	6.60	0.75
	2812	Y	7749	20.07	2.27	5564	14.41	1.63	2355	6.10	0.69
	2810	Y	3256	8.43	0.95	5486	14.21	1.61	1576	4.08	0.46
	1892	Y	5298	13.72	1.55	4980	12.90	1.46	1820	4.71	0.53
	1908	Y	5083	13.16	1.49	5041	13.06	1.48	2089	5.41	0.61
	2814	Y	8002	20.73	2.34	5761	14.92	1.69	3755	9.73	1.10
	2815	Y	1536	3.98	0.45	5806	15.04	1.70	4356	11.28	1.28
UPPER WARMLOAD	3006	Y	4478	11.60	1.31	11351	29.40	3.32	7739	20.04	2.27
	3036	Y	2858	7.40	0.84	13979	36.21	4.09	10702	27.72	3.13
	2009	Y	1591	4.12	0.47	3569	9.24	1.05	3471	8.99	1.02
	2033	Y	2193	5.68	0.64	3559	9.22	1.04	3081	7.98	0.90
	2080	Y	3245	8.40	0.95	3446	8.93	1.01	1867	4.83	0.55
	2056	Y	5880	15.23	1.72	3490	9.04	1.02	2248	5.82	0.66
	2939	Y	3465	8.97	1.01	3735	9.67	1.09	1672	4.33	0.49
	2941	Y	2191	5.67	0.64	4171	10.80	1.22	6980	18.08	2.04
LOWER REFLECTOR	2738	Y	1614	4.18	0.47	3790	9.82	1.11	3073	7.96	0.90
	2739	Y	2114	5.48	0.62	3787	9.81	1.11	2751	7.12	0.81
	2976	Y	3660	9.48	1.07	8350	21.63	2.45	5861	15.18	1.72
	2945	Y	1598	4.14	0.47	5376	13.92	1.57	8556	22.16	2.51
	4662	Y	2459	6.37	0.72	7195	18.64	2.11	3072	7.96	0.90
	4085	Y	928	2.40	0.27	6465	16.75	1.89	3196	8.28	0.94
	4087	Y	1093	2.83	0.32	7357	19.06	2.16	3515	9.10	1.03
	4176	Y	2612	6.77	0.77	9312	24.12	2.73	5223	13.53	1.53
POWER CNTRL/MON BKT	4096	Y	8354	21.64	2.45	12701	32.90	3.72	8171	21.16	2.39
	5591	Y	2646	6.85	0.78	2986	7.73	0.87	1901	4.92	0.56
	5600	Y	2229	5.77	0.65	2821	7.31	0.83	1897	4.91	0.56
	5590	Y	1280	3.32	0.37	2857	7.40	0.84	1901	4.92	0.56
	11803	Y	3534	9.15	1.04	12017	31.12	3.52	1983	5.14	0.58

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
POWER CNTRL/MON PWB	5878	Y	5021	13.01	1.47	3604	9.33	1.06	3005	7.78	0.88
	6204	Y	4691	12.15	1.37	3691	9.56	1.08	3795	9.83	1.11
PWR CNTRL/MON STANDOFF	6247	Y	2152	5.57	0.63	3616	9.37	1.06	4082	10.57	1.20
	6015	Y	1767	4.58	0.52	3823	9.90	1.12	3149	8.16	0.92
	5932	Y	1933	5.01	0.57	3668	9.50	1.07	3069	7.95	0.90
	5999	Y	2078	5.38	0.61	3599	9.32	1.05	3185	8.25	0.93
RADIATOR PANEL	10963	Y	3915	10.14	1.15	3335	8.64	0.98	1712	4.43	0.50
	10968	Y	532	1.38	0.16	3315	8.59	0.97	1410	3.65	0.41
	10974	Y	3391	8.78	0.99	3084	7.99	0.90	1438	3.72	0.42
	10969	Y	4083	10.58	1.20	3081	7.98	0.90	916	2.37	0.27
	10917	Y	7619	19.73	2.23	2752	7.13	0.81	1372	3.55	0.40
SIDEMOUNT	8313	Y	0	0.00	0.00	3414	8.84	1.00	0	0.00	0.00
	8229	Y	246	0.64	0.07	1023	2.65	0.30	2221	5.75	0.65
	7796	Y	1130	2.93	0.33	195	0.51	0.06	2653	6.87	0.78
	7840	Y	0	0.00	0.00	3414	8.84	1.00	0	0.00	0.00
	8178	Y	922	2.39	0.27	2858	7.40	0.84	1779	4.61	0.52
	9338	Y	1366	3.54	0.40	1716	4.44	0.50	2263	5.86	0.66
	9576	Y	0	0.00	0.00	3414	8.84	1.00	0	0.00	0.00
UPPER REFLECTOR	7508	Y	38	0.10	0.01	4896	12.68	1.43	43	0.11	0.01
	7240	Y	0	0.00	0.00	3414	8.84	1.00	0	0.00	0.00
	4629	Y	5977	15.48	1.75	3923	10.16	1.15	2622	6.79	0.77
	4399	Y	2059	5.33	0.60	3423	8.87	1.00	2449	6.34	0.72
	4401	Y	2517	6.52	0.74	3826	9.91	1.12	2734	7.08	0.80
	4490	Y	3526	9.13	1.03	4353	11.27	1.28	4981	12.90	1.46
	4410	Y	11568	29.96	3.39	9588	24.83	2.81	12213	31.63	3.58

METSAT RANDOM VIBRATION ACCELERATIONS - TRANSMISSIBILITIES OF SELECTED ELEMENTS - Z-LOAD												
COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE			
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q	
LARGE MASS	11812	Z	0	0.00	0.00	0	0.00	0.00	3414	8.84	1.00	
LOWER BASEPLATE	1001	Z	386	1.00	0.11	2514	6.51	0.74	3352	8.68	0.98	
	1172	Z	886	2.29	0.26	2624	6.80	0.77	4468	11.57	1.31	
	1019	Z	418	1.08	0.12	2166	5.61	0.63	3397	8.80	1.00	
	1205	Z	1001	2.59	0.29	2358	6.11	0.69	2914	7.55	0.85	
	1124	Z	707	1.83	0.21	2205	5.71	0.65	4915	12.73	1.44	
LOWER MOTOR MOUNT	1001	Z	386	1.00	0.11	2514	6.51	0.74	3352	8.68	0.98	
	1172	Z	886	2.29	0.26	2624	6.80	0.77	4468	11.57	1.31	
	2663	Z	2601	6.74	0.76	1144	2.96	0.34	4501	11.66	1.32	
	2875	Z	623	1.61	0.18	1793	4.64	0.53	3332	8.63	0.98	
	2855	Z	2666	6.90	0.78	3566	9.24	1.04	3631	9.40	1.06	
	2861	Z	1891	4.90	0.55	3461	8.96	1.01	2721	7.05	0.80	
	2888	Z	2905	7.52	0.85	3120	8.08	0.91	1318	3.41	0.39	
	2892	Z	1513	3.92	0.44	2858	7.40	0.84	1945	5.04	0.57	
	2896	Z	2884	7.47	0.84	1217	3.15	0.36	2169	5.62	0.64	
	2884	Z	1643	4.26	0.48	3803	9.85	1.11	2935	7.60	0.86	
UPPER MOTOR MOUNT	1578	Z	432	1.12	0.13	1750	4.53	0.51	3530	9.14	1.03	
	1569	Z	1072	2.78	0.31	1772	4.59	0.52	2738	7.09	0.80	
	2710	Z	3102	8.03	0.91	3796	9.83	1.11	2858	7.40	0.84	
	2779	Z	3081	7.98	0.90	4449	11.52	1.30	2691	6.97	0.79	
	2783	Z	1084	2.81	0.32	3651	9.46	1.07	3478	9.01	1.02	
	2764	Z	1553	4.02	0.45	3204	8.30	0.94	3003	7.78	0.88	
	2696	Z	2687	6.96	0.79	4193	10.86	1.23	2093	5.42	0.61	
	2700	Z	3222	8.34	0.94	2939	7.61	0.86	1682	4.36	0.49	
	2704	Z	2670	6.92	0.78	2488	6.44	0.73	1993	5.16	0.58	
	2692	Z	3293	8.53	0.96	2788	7.22	0.82	2325	6.02	0.68	

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER FRONT PANEL	1455	Z	1113	2.88	0.33	1448	3.75	0.42	3010	7.80	0.88
	1608	Z	479	1.24	0.14	1246	3.23	0.36	3796	9.83	1.11
	1191	Z	910	2.36	0.27	2587	6.70	0.76	3344	8.66	0.98
	1005	Z	367	0.95	0.11	2288	5.93	0.67	3783	9.80	1.11
	1979	Z	3046	7.89	0.89	1732	4.49	0.51	1939	5.02	0.57
	1970	Z	1790	4.64	0.52	3124	8.09	0.92	2075	5.37	0.61
	1973	Z	3139	8.13	0.92	1464	3.79	0.43	2943	7.62	0.86
	1976	Z	1423	3.69	0.42	3308	8.57	0.97	1596	4.13	0.47
LOWER AFT PANEL	1885	Z	772	2.00	0.23	1646	4.26	0.48	3821	9.90	1.12
	1961	Z	1162	3.01	0.34	2423	6.27	0.71	3300	8.55	0.97
	1963	Z	2696	6.98	0.79	1974	5.11	0.58	3258	8.44	0.95
	1315	Z	1490	3.86	0.44	1868	4.84	0.55	2908	7.53	0.85
	1215	Z	459	1.19	0.13	1823	4.72	0.53	3434	8.89	1.01
	1019	Z	418	1.08	0.12	2166	5.61	0.63	3397	8.80	1.00
	1205	Z	1001	2.59	0.29	2358	6.11	0.69	2914	7.55	0.85
	1260	Z	884	2.29	0.26	1687	4.37	0.49	2739	7.09	0.80
UPPER BASEPLATE	1455	Z	1113	2.88	0.33	1448	3.75	0.42	3010	7.80	0.88
	1608	Z	479	1.24	0.14	1246	3.23	0.36	3796	9.83	1.11
	1468	Z	459	1.19	0.13	1813	4.69	0.53	3456	8.95	1.01
	1458	Z	1490	3.86	0.44	1934	5.01	0.57	2928	7.58	0.86
UPPER FRONT PANEL	1375	Z	1290	3.34	0.38	2096	5.43	0.61	3065	7.94	0.90
	1528	Z	436	1.13	0.13	2033	5.27	0.60	3543	9.18	1.04
	1993	Z	2653	6.87	0.78	4297	11.13	1.26	3222	8.35	0.94
	2124	Z	1471	3.81	0.43	4254	11.02	1.25	3641	9.43	1.07
	2047	Z	2800	7.25	0.82	3251	8.42	0.95	2488	6.45	0.73
	2037	Z	3715	9.62	1.09	2876	7.45	0.84	3306	8.56	0.97
	2050	Z	2829	7.33	0.83	3889	10.07	1.14	6550	16.97	1.92
	2060	Z	3634	9.41	1.06	2869	7.43	0.84	3108	8.05	0.91
	2078	Z	5237	13.56	1.53	2271	5.88	0.67	3105	8.04	0.91

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER AFT PANEL	1468	Z	459	1.19	0.13	1813	4.69	0.53	3456	8.95	1.01
	1458	Z	1490	3.86	0.44	1934	5.01	0.57	2928	7.58	0.86
	2210	Z	2634	6.82	0.77	4947	12.81	1.45	2907	7.53	0.85
	2240	Z	1466	3.80	0.43	5010	12.98	1.47	3273	8.48	0.96
	2218	Z	1033	2.67	0.30	2037	5.28	0.60	2721	7.05	0.80
	2223	Z	1121	2.90	0.33	2005	5.19	0.59	2905	7.52	0.85
	2219	Z	1659	4.30	0.49	3154	8.17	0.92	2728	7.07	0.80
	2224	Z	1415	3.66	0.41	3124	8.09	0.92	2902	7.52	0.85
LOWER SHELF	1826	Z	636	1.65	0.19	1860	4.82	0.54	3997	10.35	1.17
	1828	Z	637	1.65	0.19	1914	4.96	0.56	5115	13.25	1.50
	1777	Z	656	1.70	0.19	1857	4.81	0.54	4520	11.71	1.32
	1779	Z	656	1.70	0.19	1912	4.95	0.56	4396	11.39	1.29
	1744	Z	753	1.95	0.22	1792	4.64	0.52	3882	10.05	1.14
	1767	Z	707	1.83	0.21	2030	5.26	0.59	3772	9.77	1.10
	1671	Z	1026	2.66	0.30	2002	5.19	0.59	4222	10.93	1.24
	1641	Z	1095	2.84	0.32	2090	5.41	0.61	3248	8.41	0.95
	1703	Z	892	2.31	0.26	2086	5.40	0.61	4825	12.50	1.41
	1699	Z	922	2.39	0.27	1954	5.06	0.57	5525	14.31	1.62
	1647	Z	1070	2.77	0.31	1840	4.77	0.54	4639	12.02	1.36
	1631	Z	1158	3.00	0.34	1912	4.95	0.56	4051	10.49	1.19
	1842	Z	647	1.68	0.19	1761	4.56	0.52	3361	8.71	0.98
	1776	Z	667	1.73	0.20	1830	4.74	0.54	4533	11.74	1.33
	1800	Z	654	1.69	0.19	1985	5.14	0.58	4383	11.35	1.28
	1827	Z	644	1.67	0.19	1883	4.88	0.55	4657	12.06	1.36
	1732	Z	777	2.01	0.23	1916	4.96	0.56	4941	12.80	1.45
	1718	Z	849	2.20	0.25	1986	5.15	0.58	5304	13.74	1.55
	1783	Z	679	1.76	0.20	2021	5.23	0.59	3898	10.10	1.14
	1853	Z	613	1.59	0.18	2022	5.24	0.59	3566	9.24	1.04
	1858	Z	674	1.74	0.20	1577	4.08	0.46	3900	10.10	1.14
	1805	Z	646	1.67	0.19	1960	5.08	0.57	4375	11.33	1.28
	1625	Z	1207	3.13	0.35	1773	4.59	0.52	2909	7.54	0.85
	1694	Z	917	2.38	0.27	1808	4.68	0.53	3643	9.44	1.07

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER SHELF	2572	Z	991	2.57	0.29	3737	9.68	1.09	3176	8.23	0.93
	2577	Z	972	2.52	0.28	3620	9.38	1.06	3472	8.99	1.02
	2547	Z	1060	2.75	0.31	3753	9.72	1.10	3456	8.95	1.01
	2551	Z	1050	2.72	0.31	3684	9.54	1.08	3656	9.47	1.07
	2520	Z	1117	2.89	0.33	3740	9.69	1.10	4164	10.79	1.22
	2525	Z	1113	2.88	0.33	3624	9.39	1.06	3563	9.23	1.04
	2469	Z	1329	3.44	0.39	3625	9.39	1.06	4444	11.51	1.30
	2464	Z	1296	3.36	0.38	3747	9.70	1.10	4706	12.19	1.38
	2489	Z	1210	3.13	0.35	3757	9.73	1.10	4955	12.83	1.45
	2420	Z	1405	3.64	0.41	3719	9.63	1.09	7084	18.35	2.08
LOWER RIGHT FRONT SUP	2426	Z	1406	3.64	0.41	3744	9.70	1.10	4105	10.63	1.20
	2355	Z	1640	4.25	0.48	3717	9.63	1.09	5391	13.96	1.58
	2360	Z	1618	4.19	0.47	3747	9.71	1.10	3279	8.49	0.96
	2300	Z	1837	4.76	0.54	3729	9.66	1.09	3321	8.60	0.97
	2323	Z	1827	4.73	0.54	3724	9.64	1.09	3492	9.05	1.02
	2318	Z	1806	4.68	0.53	3770	9.77	1.10	3299	8.55	0.97
	2275	Z	1942	5.03	0.57	3736	9.68	1.09	2892	7.49	0.85
	2241	Z	2103	5.45	0.62	3772	9.77	1.11	3055	7.91	0.89
	2442	Z	1357	3.52	0.40	3757	9.73	1.10	5250	13.60	1.54
LOWER RIGHT PANEL	1176	Z	858	2.22	0.25	2577	6.68	0.75	3267	8.46	0.96
	1963	Z	2696	6.98	0.79	1974	5.11	0.58	3258	8.44	0.95
	1172	Z	886	2.29	0.26	2624	6.80	0.77	4468	11.57	1.31
	2663	Z	2601	6.74	0.76	1144	2.96	0.34	4501	11.66	1.32
	2661	Z	1781	4.61	0.52	5683	14.72	1.66	3378	8.75	0.99
	1379	Z	1117	2.89	0.33	2246	5.82	0.66	3165	8.20	0.93
	1191	Z	910	2.36	0.27	2587	6.70	0.76	3344	8.66	0.98
	1205	Z	1001	2.59	0.29	2358	6.11	0.69	2914	7.55	0.85
	1315	Z	1490	3.86	0.44	1868	4.84	0.55	2908	7.53	0.85
	1455	Z	1113	2.88	0.33	1448	3.75	0.42	3010	7.80	0.88

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
UPPER RIGHT FRONT SUP	1998	Z	1085	2.81	0.32	3179	8.23	0.93	2968	7.69	0.87
	1569	Z	1072	2.78	0.31	1772	4.59	0.52	2738	7.09	0.80
	2691	Z	1100	2.85	0.32	2594	6.72	0.76	2774	7.18	0.81
	1519	Z	1163	3.01	0.34	2101	5.44	0.62	2962	7.67	0.87
	2679	Z	966	2.50	0.28	10748	27.84	3.15	2816	7.29	0.82
UPPER RIGHT PANEL	1457	Z	1490	3.86	0.44	1905	4.93	0.56	2919	7.56	0.86
	2154	Z	1800	4.66	0.53	4832	12.52	1.42	3023	7.83	0.89
	2130	Z	1787	4.63	0.52	7080	18.34	2.07	3052	7.90	0.89
	1345	Z	1440	3.73	0.42	1623	4.20	0.48	2986	7.73	0.87
	1365	Z	1322	3.43	0.39	1998	5.17	0.59	3040	7.87	0.89
	2210	Z	2634	6.82	0.77	4947	12.81	1.45	2907	7.53	0.85
	1993	Z	2653	6.87	0.78	4297	11.13	1.26	3222	8.35	0.94
	1375	Z	1290	3.34	0.38	2096	5.43	0.61	3065	7.94	0.90
TOP PANEL	11025	Z	2654	6.87	0.78	4257	11.03	1.25	12888	33.38	3.78
	11038	Z	2625	6.80	0.77	5100	13.21	1.49	4351	11.27	1.27
	11175	Z	522	1.35	0.15	1883	4.88	0.55	3282	8.50	0.96
	11170	Z	2792	7.23	0.82	1897	4.91	0.56	4449	11.52	1.30
	2627	Z	1398	3.62	0.41	4429	11.47	1.30	6347	16.44	1.86
	11128	Z	2536	6.57	0.74	3222	8.35	0.94	4377	11.34	1.28
	2210	Z	2634	6.82	0.77	4947	12.81	1.45	2907	7.53	0.85
	1993	Z	2653	6.87	0.78	4297	11.13	1.26	3222	8.35	0.94
LEFT PANEL	3243	Z	570	1.48	0.17	11412	29.56	3.34	3368	8.72	0.99
	3251	Z	605	1.57	0.18	8010	20.75	2.35	3523	9.13	1.03
	1001	Z	386	1.00	0.11	2514	6.51	0.74	3352	8.68	0.98
	1019	Z	418	1.08	0.12	2166	5.61	0.63	3397	8.80	1.00
	1608	Z	479	1.24	0.14	1246	3.23	0.36	3796	9.83	1.11
	2124	Z	1471	3.81	0.43	4254	11.02	1.25	3641	9.43	1.07
	2240	Z	1466	3.80	0.43	5010	12.98	1.47	3273	8.48	0.96

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER LEFT SHIELD	1878	Z	456	1.18	0.13	1429	3.70	0.42	3780	9.79	1.11
	2829	Z	479	1.24	0.14	1082	2.80	0.32	3320	8.60	0.97
	1840	Z	628	1.63	0.18	1541	3.99	0.45	3558	9.22	1.04
	2831	Z	822	2.13	0.24	1210	3.14	0.35	2897	7.50	0.85
	2913	Z	574	1.49	0.17	992	2.57	0.29	5568	14.42	1.63
LOWER RIGHT SHIELD	1938	Z	2939	7.61	0.86	1905	4.93	0.56	3058	7.92	0.90
	2835	Z	2711	7.02	0.79	1153	2.99	0.34	3669	9.50	1.07
	2901	Z	2710	7.02	0.79	1254	3.25	0.37	4438	11.49	1.30
	1963	Z	2696	6.98	0.79	1974	5.11	0.58	3258	8.44	0.95
	2663	Z	2601	6.74	0.76	1144	2.96	0.34	4501	11.66	1.32
UPPER LEFT SHIELD	2119	Z	901	2.33	0.26	3451	8.94	1.01	3569	9.25	1.05
	2083	Z	1173	3.04	0.34	3570	9.25	1.05	3069	7.95	0.90
	2763	Z	848	2.20	0.25	2963	7.67	0.87	3485	9.03	1.02
	2760	Z	1443	3.74	0.42	3004	7.78	0.88	3006	7.79	0.88
	2933	Z	1090	2.82	0.32	3086	7.99	0.90	8583	22.23	2.51
UPPER RIGHT SHIELD	2010	Z	1202	3.11	0.35	3177	8.23	0.93	2928	7.58	0.86
	2918	Z	1169	3.03	0.34	2595	6.72	0.76	2732	7.07	0.80
	1998	Z	1085	2.81	0.32	3179	8.23	0.93	2968	7.69	0.87
	2691	Z	1100	2.85	0.32	2594	6.72	0.76	2774	7.18	0.81
LOWER CARD CAGE	3673	Z	1582	4.10	0.46	2051	5.31	0.60	4379	11.34	1.28
	3662	Z	1371	3.55	0.40	2511	6.50	0.74	4033	10.45	1.18
	3671	Z	2037	5.28	0.60	1925	4.99	0.56	4787	12.40	1.40
	3660	Z	2048	5.30	0.60	2444	6.33	0.72	5068	13.13	1.48
	3655	Z	980	2.54	0.29	2296	5.95	0.67	3364	8.71	0.99
	3650	Z	651	1.69	0.19	2274	5.89	0.67	4376	11.33	1.28
	1179	Z	930	2.41	0.27	2262	5.86	0.66	3561	9.22	1.04
	1084	Z	550	1.43	0.16	2284	5.92	0.67	4017	10.41	1.18
	3735	Z	1957	5.07	0.57	3506	9.08	1.03	3576	9.26	1.05
	3730	Z	1635	4.23	0.48	2603	6.74	0.76	4466	11.57	1.31
	3764	Z	1184	3.07	0.35	3105	8.04	0.91	3665	9.49	1.07

COMPONENT	GRID	LOAD DIR	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
LOWER CARD CAGE	3711	Z	853	2.21	0.25	4774	12.36	1.40	3639	9.43	1.07
	3708	Z	851	2.20	0.25	2798	7.25	0.82	3556	9.21	1.04
	3753	Z	1100	2.85	0.32	4636	12.01	1.36	3621	9.38	1.06
LOWER CARD CAGE CARDS	4845	Z	2383	6.17	0.70	2167	5.61	0.63	4067	10.53	1.19
	4822	Z	1574	4.08	0.46	2027	5.25	0.59	3469	8.99	1.02
	4826	Z	1958	5.07	0.57	1984	5.14	0.58	6337	16.41	1.86
	4813	Z	920	2.38	0.27	3349	8.67	0.98	6369	16.50	1.87
	4817	Z	613	1.59	0.18	2300	5.96	0.67	3415	8.84	1.00
	4777	Z	604	1.57	0.18	2310	5.98	0.68	3372	8.73	0.99
	4725	Z	2177	5.64	0.64	2177	5.64	0.64	3721	9.64	1.09
	4765	Z	2593	6.72	0.76	2162	5.60	0.63	3689	9.55	1.08
UPPER CARD CAGE	1469	Z	1432	3.71	0.42	1635	4.24	0.48	3947	10.22	1.16
	1509	Z	1295	3.36	0.38	1995	5.17	0.58	3222	8.34	0.94
	1514	Z	647	1.67	0.19	1990	5.15	0.58	7327	18.98	2.15
	1474	Z	676	1.75	0.20	1649	4.27	0.48	7141	18.50	2.09
	3372	Z	2102	5.44	0.62	4381	11.35	1.28	4841	12.54	1.42
	3381	Z	4958	12.84	1.45	4367	11.31	1.28	7129	18.47	2.09
	3404	Z	5167	13.38	1.51	6238	16.16	1.83	7445	19.28	2.18
	3395	Z	2140	5.54	0.63	6182	16.01	1.81	3490	9.04	1.02
	2249	Z	2066	5.35	0.61	3753	9.72	1.10	2949	7.64	0.86
	2448	Z	1328	3.44	0.39	3743	9.69	1.10	4362	11.30	1.28
	3369	Z	4494	11.64	1.32	4563	11.82	1.34	4080	10.57	1.20
UPPER CARD CAGE CARDS	11836	Z	2136	5.53	0.63	5898	15.28	1.73	10459	27.09	3.06
	11251	Z	4948	12.82	1.45	5164	13.38	1.51	7951	20.59	2.33
	11829	Z	1453	3.76	0.43	3918	10.15	1.15	10706	27.73	3.14
	11203	Z	643	1.66	0.19	1888	4.89	0.55	8186	21.20	2.40
	11879	Z	2826	7.32	0.83	3947	10.22	1.16	8208	21.26	2.40
	11312	Z	2769	7.17	0.81	4096	10.61	1.20	7759	20.10	2.27

COMPONENT	GRID	LOAD	X-RESPONSE			Y-RESPONSE			Z-RESPONSE			
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q	
LOWER WARMLOAD												
	1945	Z	4389	11.37	1.29	2110	5.46	0.62	3079	7.98	0.90	
	1929	Z	3734	9.67	1.09	2080	5.39	0.61	2990	7.74	0.88	
	2812	Z	2414	6.25	0.71	1509	3.91	0.44	2713	7.03	0.79	
	2810	Z	956	2.48	0.28	1471	3.81	0.43	2833	7.34	0.83	
	1892	Z	1525	3.95	0.45	1947	5.04	0.57	3518	9.11	1.03	
1908	Z	2007	5.20	0.59	1986	5.14	0.58	3218	8.33	0.94		
	2814	Z	6208	16.08	1.82	1576	4.08	0.46	3266	8.46	0.96	
	2815	Z	2934	7.60	0.86	1568	4.06	0.46	3826	9.91	1.12	
	3006	Z	1218	3.16	0.36	3922	10.16	1.15	5235	13.56	1.53	
	3036	Z	3974	10.29	1.16	6495	16.82	1.90	6021	15.59	1.76	
UPPER WARMLOAD	2009	Z	1081	2.80	0.32	2884	7.47	0.84	2940	7.61	0.86	
	2033	Z	1576	4.08	0.46	2875	7.45	0.84	2832	7.34	0.83	
	2080	Z	2004	5.19	0.59	2778	7.20	0.81	3011	7.80	0.88	
	2056	Z	3480	9.01	1.02	2812	7.28	0.82	2856	7.40	0.84	
	2939	Z	1720	4.46	0.50	2226	5.77	0.65	2931	7.59	0.86	
	2941	Z	1655	4.29	0.48	2384	6.18	0.70	4476	11.59	1.31	
	2738	Z	1027	2.66	0.30	2256	5.84	0.66	2733	7.08	0.80	
	2739	Z	1461	3.78	0.43	2259	5.85	0.66	2651	6.87	0.78	
	2976	Z	1839	4.76	0.54	7085	18.35	2.08	4522	11.71	1.32	
	2945	Z	1136	2.94	0.33	3362	8.71	0.98	4721	12.23	1.38	
LOWER REFLECTOR	4662	Z	4901	12.69	1.44	1699	4.40	0.50	3039	7.87	0.89	
	4085	Z	1255	3.25	0.37	1628	4.22	0.48	2909	7.53	0.85	
	4087	Z	1556	4.03	0.46	2160	5.60	0.63	3155	8.17	0.92	
	4176	Z	2233	5.78	0.65	6441	16.68	1.89	4419	11.44	1.29	
	4096	Z	5410	14.01	1.58	8852	22.93	2.59	6557	16.98	1.92	
POWER CNTRL/MON BKT	5591	Z	5091	13.19	1.49	4753	12.31	1.39	2987	7.74	0.87	
	5600	Z	7148	18.51	2.09	4002	10.37	1.17	2993	7.75	0.88	
	5590	Z	3064	7.93	0.90	3219	8.34	0.94	3022	7.83	0.89	
	11803	Z	5215	13.51	1.53	29047	75.24	8.51	6872	17.80	2.01	

COMPONENT	GRID	LOAD	X-RESPONSE			Y-RESPONSE			Z-RESPONSE		
			RMS	GRMS	Q	RMS	GRMS	Q	RMS	GRMS	Q
POWER CNTRL/MON PWB	5878	Z	3949	10.23	1.16		6891	17.85	2.02	4753	12.31
	6204	Z	5104	13.22	1.50		4278	11.08	1.25	4422	11.45
PWR CNTRL/MON STANDOFF	6247	Z	1741	4.51	0.51		7437	19.26	2.18	4391	11.37
	6015	Z	1985	5.14	0.58		3736	9.68	1.09	4629	11.99
	5932	Z	1675	4.34	0.49		7612	19.72	2.23	4559	11.81
	5999	Z	3917	10.14	1.15		5001	12.95	1.46	4630	11.99
RADIATOR PANEL	10963	Z	2793	7.23	0.82		1843	4.77	0.54	3765	9.75
	10968	Z	522	1.35	0.15		1845	4.78	0.54	3382	8.76
	10974	Z	3019	7.82	0.88		907	2.35	0.27	3381	8.76
	10969	Z	4666	12.08	1.37		891	2.31	0.26	3291	8.52
	10917	Z	2420	6.27	0.71		1128	2.92	0.33	3389	8.78
SIDEMOUNT	8313	Z	0	0.00	0.00		0	0.00	0.00	3414	8.84
	8229	Z	345	0.89	0.10		3321	8.60	0.97	1559	4.04
	7796	Z	1868	4.84	0.55		2670	6.91	0.78	910	2.36
	7840	Z	0	0.00	0.00		0	0.00	0.00	3414	8.84
	8178	Z	3411	8.84	1.00		3838	9.94	1.12	2154	5.58
	9338	Z	1040	2.69	0.30		3941	10.21	1.15	2216	5.74
UPPER REFLECTOR	9576	Z	0	0.00	0.00		0	0.00	0.00	3414	8.84
	7508	Z	100	0.26	0.03		1025	2.65	0.30	3402	8.81
	7240	Z	0	0.00	0.00		0	0.00	0.00	3414	8.84
	4629	Z	3337	8.64	0.98		3220	8.34	0.94	2761	7.15
	4399	Z	1271	3.29	0.37		3296	8.54	0.97	2709	7.02
	4401	Z	1734	4.49	0.51		3972	10.29	1.16	3102	8.03
	4490	Z	2499	6.47	0.73		6208	16.08	1.82	5771	14.95
	4410	Z	7874	20.40	2.31		8104	20.99	2.37	9557	24.75

METSAT RANDOM VIBRATION DISPLACEMENTS - RATTLESPACE AT THE LOWER CARD CAGE CIRCUIT CARDS												
COMPONENT	GRID	GRID	ΔX-DEFLECTION			ΔX-DEFLECTION			ΔX-DEFLECTION			
			GAP	X-LOAD		GAP	Y-LOAD		GAP	Z-LOAD		
				1Σ ΔX	3Σ ΔX		1Σ ΔX	3Σ ΔX		1Σ ΔX	3Σ ΔX	
LOWER CARD CAGE CIRCUIT CARDS	4808	4848	0.037	0.00032	0.00096	0.037	0.00150	0.00451	0.037	0.00032	0.00095	
	4809	4849		0.00032	0.00097		0.00073	0.00218		0.00017	0.00052	
	4810	4850		0.00015	0.00045		0.00030	0.00090		0.00010	0.00029	
	4811	4851		0.00009	0.00026		0.00025	0.00076		0.00008	0.00024	
	4812	4852		0.00007	0.00021		0.00020	0.00059		0.00007	0.00021	
	4803	4843		0.00036	0.00108		0.00152	0.00457		0.00028	0.00083	
	4804	4844		0.00035	0.00104		0.00069	0.00207		0.00022	0.00065	
	4805	4845		0.00016	0.00049		0.00041	0.00124		0.00011	0.00032	
	4806	4846		0.00009	0.00028		0.00027	0.00082		0.00008	0.00025	
	4807	4847		0.00007	0.00020		0.00019	0.00056		0.00007	0.00021	
	4828	4868		0.00123	0.00368		0.00058	0.00174		0.00037	0.00112	
	4829	4869		0.00847	0.02540		0.00320	0.00961		0.00329	0.00986	
	4830	4870		0.00311	0.00932		0.00135	0.00406		0.00117	0.00350	
	4831	4871		0.00452	0.01356		0.00189	0.00567		0.00152	0.00457	
	4832	4872		0.00293	0.00879		0.00086	0.00259		0.00088	0.00265	
4823	4863		0.00291	0.00873		0.00127	0.00381		0.00098	0.00295		
4824	4864		0.00735	0.02206		0.00261	0.00783		0.00244	0.00731		
4825	4865		0.00137	0.00411		0.00100	0.00300		0.00098	0.00294		
4826	4866		0.00165	0.00496		0.00125	0.00375		0.00120	0.00361		
4827	4867		0.00183	0.00548		0.00093	0.00280		0.00074	0.00222		

METSAT RANDOM VIBRATION DISPLACEMENTS - RATTLESPLACE AT THE UPPER CARD CAGE CIRCUIT CARDS													
COMPONENT	GRID	GRID	ΔX-DEFLECTION			ΔX-DEFLECTION			ΔX-DEFLECTION			ΔX-DEFLECTION	
			X-LOAD			Y-LOAD			Z-LOAD			Z-LOAD	
			GAP	1Σ ΔX	3Σ ΔX	GAP	1Σ ΔX	3Σ ΔX	GAP	1Σ ΔX	3Σ ΔX	GAP	1Σ ΔX
UPPER CARD CAGE CIRCUIT CARDS	11300	11867	0.137	0.00061	0.00184	0.137	0.00150	0.00451	0.137	0.00032	0.00095		
	11301	11868		0.00043	0.00130		0.00012	0.00035		0.00019	0.00057		
	11302	11869		0.00026	0.00079		0.00010	0.00031		0.00014	0.00043		
	11303	11870		0.00014	0.00042		0.00011	0.00033		0.00015	0.00046		
	11304	11871		0.00012	0.00037		0.00010	0.00029		0.00015	0.00044		
	11305	11872		0.00014	0.00043		0.00009	0.00027		0.00013	0.00038		
	11306	11873		0.00011	0.00033		0.00008	0.00024		0.00009	0.00028		
	11307	11874		0.00007	0.00020		0.00008	0.00023		0.00009	0.00028		
	11308	11875		0.00079	0.00237		0.00016	0.00047		0.00030	0.00089		
	11309	11876		0.00059	0.00177		0.00012	0.00036		0.00019	0.00057		
	11310	11877		0.00040	0.00121		0.00013	0.00039		0.00016	0.00047		
	11311	11878		0.00024	0.00071		0.00013	0.00038		0.00016	0.00047		
	11312	11879		0.00015	0.00044		0.00012	0.00036		0.00015	0.00044		
	11313	11880		0.00013	0.00038		0.00012	0.00037		0.00013	0.00039		
	11314	11881		0.00011	0.00032		0.00011	0.00033		0.00011	0.00032		
	11315	11882		0.00011	0.00033		0.00012	0.00036		0.00011	0.00034		
	11316	11883		0.00068	0.00204		0.00019	0.00058		0.00033	0.00099		
	11317	11884		0.00053	0.00158		0.00018	0.00054		0.00025	0.00076		
	11318	11885		0.00038	0.00115		0.00017	0.00052		0.00020	0.00061		
	11319	11886		0.00025	0.00074		0.00014	0.00043		0.00015	0.00046		
	11320	11887		0.00017	0.00052		0.00013	0.00039		0.00013	0.00040		
	11321	11888		0.00015	0.00045		0.00015	0.00044		0.00013	0.00039		
	11322	11889		0.00012	0.00036		0.00013	0.00038		0.00012	0.00036		
	11323	11890		0.00007	0.00022		0.00008	0.00023		0.00009	0.00027		

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Report Documentation Page

1. Report No. ---	2. Government Accession No. ---	3. Recipient's Catalog No. ---	
4. Title and Subtitle Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Stress Analysis Report		5. Report Date 1 April 1996	
		6. Performing Organization Code ---	
7. Author(s) R.J. Heffner		8. Performing Organization Report No. 10805	
		10. Work Unit No. ---	
9. Performing Organization Name and Address Aerojet 1100 W. Hollyvale Azusa, CA 91702		11. Contract or Grant No. NAS 5-32314	
		13. Type of Report and Period Covered Final	
12. Sponsoring Agency Name and Address NASA Goddard Space Flight Center Greenbelt, Maryland 20771		14. Sponsoring Agency Code ---	
15. Supplementary Notes ---			
16. ABSTRACT (Maximum 200 words) This is the Integrated Stress Analysis REport for the Advanced Microwave Sounding Unit-A (AMSU-A).			
17. Key Words (Suggested by Author(s)) EOS Microwave System		18. Distribution Statement Unclassified — Unlimited	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of pages 651	22. Price ---

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4. TITLE AND SUBTITLE Integrated Advanced Microwave Sounding Unit -A (AMSU-A), Stress Analysis REport			5. FUNDING NUMBERS NAS 5-32314	
6. AUTHOR(S) R.J. Heffner				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Aerojet 1100 W. Hollyvale Azusa, CA 91702			8. PERFORMING ORGANIZATION REPORT NUMBER CDRL 113 10805 1 April 1966	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) NASA Goddard Space Flight Center Greenbelt, Maryland 20771			10. SPONSORING/MONITORING AGENCY REPORT NUMBER ---	
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12a. DISTRIBUTION/AVAILABILITY STATEMENT ---			12b. DISTRIBUTION CODE ---	
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14. SUBJECT TERMS EOS Microwave System			15. NUMBER OF PAGES 651	
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